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#### ABSTRACT

This document contains the proceedings of the National Educational Computing Conference (NECC) 2000. It includes the advance program and registration materials for the NECC. Major themes of NECC 2000 include: connecting technology to teaching and learning; staying connected with professional development; moving beyond the crossroads; teachers as agents for change; connected communities: schools, businesses, and resources; and beyond the crossroads: where do we go from here? The following information is provided: a schedule of events; profiles of keynote speakers; event highlights; descriptions of workshops; and the educational program, including concurrent sessions, papers and posters, and "make and take" sessions. Also listed are the NECC 2000 Conference Committee and Program Committee, exhibitors, tours, and National Educational Computing Association (NECA) board of directors, membership, and societies. Registration information, travel/transportation, and housing reservation materials, tours, workshops, sessions/breakouts, speaker index, NECC 2000 conference and program committees, NECA Board, member society representatives/staff, and special acknowledgments are also included. (AEF)



NECC 2000: "Connecting @ the Crossroads" (Georgia World Congress Center, Atlanta, Georgia, June 26-28, 2000)

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### Antroduction from NECC 2000 Chair

How profound that as the world embraces the 21st century we join together at the 21st National Educational Computing Conference (NECC 2000) at Atlanta's Georgia World Congress Center. These research proceedings of NECC 2000-Connecting @ the Crossroads project you in to multidimensional crossroads:

- Atlanta's existence is at a *crossroads* of transportation, air, rail, and highway, but most recently *fiber*.
- Fiber is providing a crossroads bringing together the world, communities, and schools.
- Schools are at a *crossroads* as they determine whether to continue as is, or to choose a new pathway.

And so, you as an individual become the profound nexus to all the others *Connecting @ the Crossroads* and to those you will return to at home.

Just as the information highway is fueled by data, we as educators will find in these proceedings the reports on the presentations, innovations, trends, and research that will assist education in becoming increasingly data-driven. The importance of credible cognitive research *connected* to pedagogical research *connected* to the integration of technology as an instructionally relevant and practical tool will propel us forward to engage each student in achieving success.

Connecting Technology to Teaching and Learning; Staying Connected with Professional Development; Moving Beyond the Crossroads: Teachers as Agents for Change; and Connected Communities: Schools, Businesses, and Resources are the major themes of NECC 2000, which will eventually lead us to the ultimate theme, Beyond the Crossroads: Where Do We Go From Here?

These themes demonstrated through general sessions, paper sessions, traditional and Internet poster sessions, workshops, and informal networking are the result of the deliberate diligence and expertise of numerous individuals and groups. All of these indomitable people join with me in encouraging you to select the most energizing pathway at NECC 2000-Connecting @ the Crossroads that may serve to provide you with the platform from which to launch your students in to success in the new millennium.

Paul Ohme NECC 2000 Conference Chair



### FINAL PROGRAM





GEORGIA WORLD CONGRESS CENTER
ATLANTA, GA

#### **HOSTED BY**

Georgia Institute of Technology's Center for Education Integrating Science, Mathematics, and Computing (CEISMC)

#### SPONSORED BY

National Educational Computing Association (NECA), Inc.

#### IN COOPERATION WITH

Georgia Department of Education

Georgia State University College of Education

Georgia Tech Research Institute

University of Georgia College of Education

Alabama State Department of Education

Georgia Educational Technology Conference

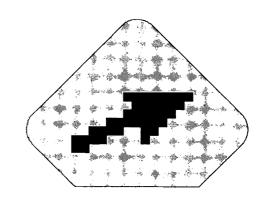
Georgia Association of Educators

Professional Association of Georgia Educators

National Education Association

JUNE 26-28, 2000







### CONNECTING @ THE CROSSROADS"

As the world embraces the 21st century, we welcome you to the 21st National Educational Computing Conference (NECC 2000) at Atlanta's Georgia World Congress Center (GWCC). Three years ago, when our committee welcomed the chance to bring NECC to Atlanta, we recognized how profoundly appropriate it was that we come together at this **Crossroads** in place, time, and revolutionary transformation—the intersection of education, technology, and learning. NECC 2000 is truly a multidimensional **Crossroads**, as

- Atlanta is as a Crossroads of transportation: air, rail, highway, and most recently telecommunication technologies.
- Telecommunication technologies provide a Crossroads to bring together the world, communities, and schools.
- Schools are at a Crossroads as they determine whether to continue as is
  or choose among paths to engender excellence in learning.

And so, you, as an individual, become the profound conduit to all the others **CONNECTING** @ **THE CROSSROADS** and to those you will affect when you return home.

As you immerse yourself in many technological, intellectual, and social connections over the next few days, know that we are celebrating the educational opportunities that must be afforded all students in the new millennium. Each of us has been entrusted with the responsibility of educating the future workforce and ultimately the political, economic, spiritual, community, governmental, and educational leaders of the 21st century. We encourage you to use **CONNECTING** @ **THE CROSSROADS** as the platform for connecting to credible cognitive research, which is connected to pedagogical research, which is connected to the integration of technology as an instructionally relevant and practical tool that will propel us forward to help each student achieve success.

We join with you in reveling in the incredible behind-the-scenes magic accomplished by the indomitable energy, dedication, and vision of numerous volunteers we now call friends. We hope this conference will be the personal nexus of your future and the future of your students!

Paul Ohme, Conference Chair CEISMC, Georgia Institute of Technology

Claudia Huff, Conference Co-Chair GTRI, Georgia Institute of Technology

Lynne Schrum, Conference Co-Chair
University of Georgia-Athens

Kathy O'Neill, Program Chair Georgia State University

Anita Best, Program Co-Chair

ISTE (International Society for Technology in Education)

John Richards, Program Co-Chair Turner Learning



A second-to-none learning extravaganza awaits educators of all levels at NECC 2000—You'll learn strategies and practical solutions for integrating and implementing technology into your educational experience.

Get ready...get set...learn!

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SPECIAL ACKNOWLEDGMENTS

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# SCHEDULE OF EVENTS

8 am-5 pmPT³ (by invitation), Sheraton Atlanta	7 am-6 pmRegistration — GWCC
5:30-7:30 pm	7:15-8:15 am First Timers' Session, GWCC, Ballroom IV
	8 am- 4 pm Kids' Aerospace Camp*
TURDAY, JUNE 24, 2000	8:30–9:45 am Keynote: John Kuglin, GWCC, Hall G Sponsored by Compaq Computer Corporation
7 am-7 pmRegistration — GWCC	8:30–11:30 am Morning Workshops*
8 am-5 pmISTE Affiliates Meeting Westin Peachtree Gaza	9:45 am-5:30 pm Exhibit Halls D, E, F Open
8 am-5 pmPT <sup>3</sup> (by invitation), Sheratosi Atlanta	9:45–10:45 am Continental Breakfast in Exhibit Hall Sponsored by AOL.school
8:30-11:30 am Morning Workshops*	10 am-12 noon
9 am-1pm Tour: A Taste of the Peach*	GWCC, Room 367W
9 am-4 pm Education (3r a Sustainable Future	10 am-12 noon Make & Take Sessions*
Symposizem* (preregistration only, seats may be available.)	10 am–12 noon Student Showcase, sponsored by HiFusion, GWCC Level 2, opposite Room 265W
am–4 pm Full-Day Workshops*	10 am-1 pm Georgia Superintendents & School Board
:30-4:30 pm Afternoon Workshops*	Members Meeting (by invitation), Omni, Mimosa & Rutherford Rooms
pm–12 midnight Tour: Spectacular Stone Mountain Park*	11 am-12 noon
-10 pmAtlanta Braves Game*	11 am–12 noon DeKalb County Meeting (by invitation), GWCC, Hall G
	12:30-1:30 pm Concurrent Sessions 2
NDAY, JUNE 25, 2000	12:30-1:45 pm ISTE Membership Meeting,
am-7 pmRegistration — GWCC	GWCC, Room 164W
3 am–2 pmPT³ (by invitation), Sheraton Atlanta	1–3 pm Congressional Hearing on Web-Based Education
3:30–11:30 am Morning Workshops*	(open), GWCC, Hall G
9 am-3 pm Tour: Covington's Mansions*	1–4 pm
am-4 pm Full-Day Workshops*	Foundation (by invitation), Omni, Mimosa Room
9 am—4 pm Education for a Sustainable Future Symposium* (preregistration only,	1:30–3:30 pm Web Poster/Posters, GWCC Room 367W 1:30–3:30 pm Make & Take Sessions*
seats may be available.)	
pm-5 pm Tour: Atlanta's Famous Firsts*	1:30-3:30 pm Student Showcase, sponsored by HiFusion, GWCC Level 2, opposite Room 265W
pm–5 pm Tour: Georgia's Stone Mountain*	1:30–4:30 pm Afternoon Workshops*
:30-4:30 pm Afternoon Workshops*	2-3 pm Concurrent Sessions 3
2:30–5:30 pm International Visitors' Reception,	3-3:30 pm Refreshment Break in Exhibit Hall
& Special CNN Tours*, CNN/Omni Terrace	3:30-4:30 pm Concurrent Sessions 4
3–5 pm U.S. Dept. of Education (by invitation),  GWCC, Room 366W	5–6 pm""Thrashers"-of-a-Feather Sessions
5–6 pm First Timers' Session, GWCC, Ballroom IV	5–6 pmAlabama Tech Coordinators Meeting (by invitation), GWCC, Room 364W

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\* STARRED EVENTS REQUIRE A TICKET AND/OR PREREGISTRATION. CHECK AT ON-SITE REGISTRATION FOR TICKET AVAILABILITY.

7-9 pm ....... Opening Reception, GWCC West Concourse

Sponsored by NetSchools & Hewlett-Packard Company

Open to all NECC Registrants!

GWCC = GEORGIA WORLD CONGRESS CENTER

5-9 pm ...... Atlanta Zoo Extravaganza\*

Sponsored by Simplexis.com



# SCHEDULE OF EVENTS

TUESDAY, JUNE 27, 2000
6:45–8 am Fun Run/Walk
Sponsored by PowerSchool, Inc., Centennial Olympic Park
7 am-5:45 pm Registration — GWCC
7 am–8 am Volunteer Thank You Breakfast, GWCC, Level 1
7:15-8:15 am First Timers' Session, GWCC, Ballroom IV
8 am-4 pm Kids' Aerospace Camp*
8:30–10 am Keynote: Craig Barrett, GWCC, Hall G with special presentation by U.S. Secretary of Education Richard W. Riley
8:30–11:30 am Morning Workshops*
9:30 am-5 pm Exhibit Halls D, E, F Open
10–10:30 am Coffee Break,
GWCC West Meeting Room Levels
10 am-12 noon Web Posters/Posters, GWCC, Room 367W
10 am-12 noon Make & Take Sessions*
10 am-12 noon Student Showcase, sponsored by HiFusion, GWCC Level 2, opposite Room 265W 10:30-11:30 am Concurrent Sessions 5
12 noon-1 pm
1 pm-5 pm Tour: Atlanta's Famous Firsts*
1:30–2:30 pm
-
1:30–3:30 pm Web Posters/Posters, GWCC, Room 367W 1:30–3:30 pm
1:30–3:30 pm Student Showcase, sponsored by HiFusion, GWCC Level 2, opposite Room 265W 1:30–4:30 pm Afternoon Workshops*
2:30–3 pm
GWCC, West Meeting Room Levels
3–4 pm Concurrent Sessions 8
4-5:30 pm NECA LIGHTS Reception (by invitation), Omni, Greenwood Room
4:30–5:30 pm Concurrent Sessions 9
5:45–6:45 pm" "Thrashers"-of-a-Feather Sessions
5:45–6:45 pm U.S. Dept. of Ed Assistive Technology Session (open), GWCC, Ballroom IV
5:45–6:45 pm Mississippi Dept. of Education Meeting, (by invitation), Hyatt Regency Hotel, Baker Room
6:30–9 pm NECC 2000 Predance Minimall Hyatt Regency Hotel, Regency Ballroom
9 –11 pm Dance & Conference Social, Hyatt Regency Hotel, Centennial Ballroom Sponsored by Microsoft Corporation & Compaq Computer Corporation

#### WEDNESDAY, JUNE 28, 2000

, , ,
7 am-3 pm Registration — GWCC
7:15-8:15 am "Thrashers"-of-a-Feather Sessions
8 am-4 pm Kids' Aerospace Camp*
8:30–9:45 am Keynote: Duane Ackerman, GWCC, Hall G
8:30-11:30 am Morning Workshops*
9 am-1 pm Tour: A Taste of the Peach*
9:30 am-2:30 pm Exhibit Halls D, E, F Open
10–10:30 am
10 am–12 noon
10 am-12 noon Make & Take Sessions*
10 am-12 noon Student Showcase, sponsored by HiFusion, GWCC Level 2, opposite Room 265W 10:30-11:30 am Concurrent Sessions 10
11:45 am–1:15 pm Luncheon* & Keynote: Betty Siegel, GWCC, Ballrooms I–III Sponsored by Cisco Systems, Inc.
12 noon-1 pm Concurrent Sessions 11
1:30-2:30 pm Concurrent Sessions 12
2:30-3 pm Refreshment Break, GWCC, West Meeting Room Levels
3–4 pm Concurrent Sessions 13
4:15–5 pm Closing Giveaways & NECC 2001 Preview GWCC, Hall G

#### TOURS

Tour participants are asked to meet inside the west entrance of the GWCC 15 minutes prior to the start time of each tour. Tours may be added to your registration through On-Site Registration. Guides will lead participants to the bus loading area.

### WORKSHOPS

Seats in workshops may still be available!
Stop by On-Site Registration for details. Costs are
\$70 for half-day and \$140 for full-day. Buses will
load at the Tours Departure/Return Area outside
and to the west of the NECC Registration area
between the Georgia International Plaza and the
Georgia Dome.

### "MAKE & TAKE" SESSIONS

Seats in Make & Takes may still be available! Stop by On-Site Registration for details. The cost is \$10. Descriptions are on page 19.



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### KEYNOTES

#### ALL KEYNOTE SESSIONS WILL BE HELD IN HALL G AT THE GWCC.

#### JOHN KUGLIN

The Technology Puzzle: Understanding and Connecting the Pieces

MONDAY, 8:30-9:45 AM



John Kuglin is Director of Educational Outreach and Executive Director for NASA's Earth Observing System at the University of Montana-Missoula.

As classrooms transition into the new millennium, technology is a critical tool for schools. However, new developments are occurring at breakneck speeds. Educators find themselves staring into the box of a 5,000-piece technology puzzle. In this presentation, Kuglin will demonstrate the availability of the puzzle pieces and demystify the process for connecting them in a manner that leaves participants feeling comfortable. Kuglin will highlight current and emerging Internet, video, computer, and satellite technologies with suggestions for implementing these tools in a cohesive manner.

#### CRAIG BARRETT

Computers, Connections, and Community: Why We Care and Why It Matters

TUESDAY, 8:30-10 AM



Craig Barrett is President and Chief Executive Officer of the Intel Corporation.

SPECIAL PRESENTATION BY U.S. SECRETARY RICHARD W. RILEY

TUESDAY, 8:30-10 AM

JOIN INTEL IN HALL "H" IMMEDIATELY Innovations in **FOLLOWING THE** technology **TUESDAY KEYNOTE FOR** and in-REFRESHMENTS AND AN novative INTRODUCTION TO MANY OF INTEL'S educational **EXCITING NEW** initiatives are ACTIVITIES! connecting us to

the wider world in various ways, and also to one another. Come hear how learning communities (administrators, teachers, students, parents, community-based organizations, and businesses) are collaborating to improve learning and performance, and tie us more closely together.

Barrett's interactive presentation will include demonstrations onstage by teachers from around the country who have incorporated technology in meaningful ways into their classroom curricula, administrators who have used technology in innovative ways to get parents and their local community more involved in education, and a diverse group of students who are involved in making technology happen in their schools.

### **DUANE ACKERMAN**

Eye for Opportunity

WEDNESDAY, 8:30-9:45 AM



Duane Ackerman is Chairman and CEQ of the Atlanta-based BellSouth Corporation.

Ackerman will focus on the enormous opportunities that the information economy and broadband technologies have created for students as learners and future employees, for educators as shapers of technology and technology use, and for communities as the standard-bearers for quality of life. His perspective arises from the breadth of BellSouth operations, which provide telecommunications, wireless communications, cable and digital television, advertising and publishing, and Internet and data services to more than 36 million customers in 20 countries worldwide.

BETTY SIEGEL

Connecting for Success

WEDNESDAY LUNCHEON\*, 11:45 AM-1:15 PM. GWCC, BALLROOMS I-III



Betty Siegel is the first woman to head an institution in the 34-unit University System of Georgia. She has been President of Kennesaw State University since 1981.

Siegel will bring her remarkable sense of humor and perspectives on how we cope with change and the future to the NECC 2000 luncheon program. She has been instrumental in the inclusion of technology in the teacher preparation program in Georgia and is widely recognized for her vision and leadership.

As Kennesaw State University President, Siegel is focused on the potential of technology to improve and affect education, specifically its impact on the university. She recently hired a Chief Information Officer to ensure that KSU is moving forward to meet the needs of its students and faculty.

\* \$25 ticket purchase required.



#### OPENING RECEPTION

Please join us Sunday night to celebrate NECC 2000's crossroads extravaganza, "Connecting to the Future"! Held in the west concourse of the GWCC, this event will feature food, beverages, and four bands (from mellow jazz to swingin' blues to toe-tapping Dixieland to rock 'n' roll) and is hosted by NetSchools and the Hewlett-Packard Company. Bring your dancing shoes if you like to party, or find a quiet spot to reunite with old friends. Attendance is complimentary with your registration—don't forget to pick up your badge first!

Sunday, June 25, 7-9 pm, GWCC, West Concourse, Levels 1 & 2

#### SPECIAL FOR FIRST TIMERS

Join us in Ballroom IV to learn how to navigate through the city of Atlanta, the GWCC, the Exhibit Hall, and the conference program. Find out how you can make the most out of your premier NECC experience! Presented by Nancy Clark and Mindy DiSalvo, DeKalb County Schools, Georgia.

Sunday, June 25, 5–6 pm; repeats Monday, June 26, and Tuesday, June 27, 7:15-8:15 am, GWCC, Ballroom IV

#### INTERNATIONAL VISITORS' RECEPTION AND CNN TOURS

NECC 2000 welcomes our international attendees to a reception at the Omni Terrace at CNN's global headquarters! Right next to the GWCC, CNN develops and produces programming for 24 news and multiple non-news channels targeted to audiences around the world as well as programming and technology resources for education. The reception will feature presentations by Turner Learning and the CNN International Channel. A NECC First Timers' video will also be presented.

In addition, for an extra fee, you may choose to preregister for one of the CNN Studio Tours set aside especially for NECC international participants during the reception. There are a limited number of slots for tours, so acceptance will be on a first-come, first-served basis. tickets must be purchased at On-Site Registration prior to the Reception. No tour tickets will be sold at the Omni or at CNN.

The Standard Tour includes stops in the interactive exhibit area, digitally enhanced control room theater, and special effects studio. View the main newsrooms of CNN and Headline News from a glass overlook, one floor above. \$8.

The VIP Tour is more in-depth and personalized than the Standard Tour and includes visits to the actual newsroom floors of CNN Headline News, CNN Sports Illustrated, CNN International, and CNN Interactive. \$25.

Sunday, June 25, 2:30-5:30 pm, Omni Terrace, Omni Hotel. Tour start time is 4:30 pm.

# THE NECC EXHIBIT HALL—LARGEST OF ITS KIND IN THE COUNTRY!

Be sure to visit the largest national education-technology exhibit in the country, featuring 1,200+ booths and more than 350 companies! Refer to the NECC 2000 *Exhibit Guide* (in your registration packet) for a complete listing of NECC 2000 Exhibitors and descriptions of each. Take your first stroll through this record-breaking exhibit during the Morning Continental Breakfast, and return for a relaxing ice cream, pretzel, popcorm, and refreshment break that same afternoon.

Continental Breakfast in Exhibit Halls D, E, F, Monday, June 26, 9:45–10:45 am; Sponsored by AOL.school.

Refreshment Break in Exhibit Halls D, E, F, Monday, June 26, 3-3:30 pm

#### STUDENT PERFORMERS

Student Performers from DeKalb County (Georgia) Schools will provide entertainment before the Monday and Tuesday keynote sessions (8–8:30 am) and the Wednesday conference luncheon (11–11:45 am). School names and performer names will be included in each day's conference newsletter. We hope you'll turn out early to show your support and give 'em a hand!



#### WHAT'S IN YOUR BAG?!

Check it out! Thanks to Apple for providing NECC with amazing tote bags for each attendee. Each bag contains the following goodies:

- National Educational Technology Standards (NETS) for Teachers, first edition
- Commemorative NECC 2000 CD-ROM
- ISTE Catalog
- · CoSN Membership Brochure
- Clipboard (IBM Global Education, TIVOLI, and Lotus Development)
- Custom Note Pad (PowerSchool, Inc.)
- Day Planner (Edmark)
- 3-Color Highlighter (Intel Corporation)
- Pen (National Computer Systems)
- Post-It Note Pad (Knowledge Adventure)
- CD Caddy (LearningPays.Com)
- Name Badge Lanyards (Compag Computer Corporation)
- Luggage Tag\* (Follett Software Company)
- Screen Sweep (Follett Software Company)
- Pen (Riverdeep Interactive Learning)
- · Mouse Pad (Palm, Inc.)
- Mouse Pad (Scholastic Internet Group)
- Name Badge Holder (TimeCruiser)
- \* TIPI SLIP YOUR BUSINESS CARD OR ID INSIDE AND ATTACH TO THE STRAP OF YOUR CONFERENCE TOTE BAG FOR EASY IDENTIFICATION DURING THE CONFERENCE...

#### WEB COMMISSION HEARING

The Web-Based Education Commission will hold a hearing on *The Promise of the Internet to Empower K–12 Learners*. Nebraska Senator Bob Kerrey is the chair, and Rep. Johnny Isakson of Georgia is the vice-chair. Witnesses will participate in a facilitated dialogue covering K–12 technology-related issues, including online schools, online courses, professional development, standards and assessment, accreditation, access for underserved populations, online privacy, and evaluation.

Monday, June 26, 1-3 pm, GWCC, Hall G

#### MONDAY NIGHT ZOO EXTRAVAGANZA

Get wild at our Monday night event at the Atlanta Zoo! Visit Yang Yang and Lun Lun, the zoo's recently acquired giant pandas, along with a host of other marvelous animals. Join us for a delicious array of food and beverages while you visit Atlanta's animal friends. \$25 per person includes transportation to and from conference hotels and GWCC. Please check at On-Site Registration for ticket availability. Sponsored by Simplexis.com.

Monday, June 26, 5-8:45pm. Shuttles will provide continuous service between hotels and the zoo, 5-9 pm.

#### TUESDAY FUN RUN/WALK

Start your morning off right with a brisk walk or run! Space is limited and will be on a first-come basis. Each participant will receive refreshments. The first 300 to register will also receive a commemorative T-shirt following the event. Sign up on-site at the NECC 2000 Information Booth located in the main registration area at the GWCC. Free to all NECC 2000 attendees. Sponsored by PowerSchool, Inc.

Tuesday, June 27, 6:45–8 am. Please confirm run location and busing schedule at the NECC 2000 Info Booth when signing up.

#### TUESDAY PREDANCE MINIMALL

Go on a shopping expedition hosted by a selection of NECC 2000 exhibitors at the Hyatt Regency Atlanta. No sales are allowed on the floor of the primary conference exhibit, so the NECC 2000 Minimall is your chance to purchase software, hardware, and materials to take home with you. Sack-sitting will be provided by the Hyatt for those attending the dance (fee applies). Entrance is free to all NECC 2000 attendees.

Tuesday, June 27, 6:30–9 pm, Hyatt Regency Atlanta, Regency Ballroom. Shuttles will provide continuous service between the Hyatt and other conference hotels, 6:30 pm–12 midnight.

#### TUESDAY DANCE/SOCIAL

NECC 2000 would not be complete without a dance-'til-you-drop party! Our Microsoft- and Compaq-sponsored event will feature "Music in Motion," one of Atlanta's most popular dance bands. Each attendee will receive tickets good for two hosted drinks of his or her choice (including beer, wine, and call-brand drinks) and each is invited to indulge his or her late night sweet tooths at our sumptuous dessert buffet (French pastries, chocolate fruit fondue, and dessert cheeses) with gourmet coffees. Free to all NECC 2000 attendees.

Tuesday, June 27, 9–11 pm, Hyatt Regency Atlanta, Centennial Ballroom. Shuttles will provide continuous service between the Hyatt and other conference hotels, 6:30 pm–12 midnight.



#### WEDNESDAY CONFERENCE LUNCHEON WITH BETTY SIEGEL

The conference luncheon includes your choice of Mexican/chicken or Mediterranean/ vegetarian wraps, coffee or tea, and a taste-tempting dessert. Our speaker will be Betty Siegel, President of Kennesaw State University in Georgia. \$25 ticket purchase is required, and space is limited. Check with On-Site Registration for ticket availability.

Wednesday, June 28, 11:45 am-1:15 pm, GWCC, Ballrooms I-III



#### "THRASHERS" OF-A-FEATHER

Informal opportunities for those with common interests to gather and exchange ideas will be offered twice during the conference. Please see pages 33 and 48 for a listing of titles and room locations at the GWCC. Additional topics will be announced in the daily newsletter and at the NECC Information Booth.

Monday, June 26, 5-6 pm, and Tuesday, June 27, 5:45-6:45 pm

#### STUDENT SHOWCASE HIGHLIGHTS INNOVATIVE PROJECTS

All attendees will have an exciting opportunity to see examples of what schools are doing with technology. Students will present creative projects that use technology to facilitate learning. Questions will be answered and handouts will be provided. See great ideas successfully implemented!

Monday, June 26, and Tuesday, June 27, 10 am-12 noon and 1:30-3:30 pm; Wednesday, June 28, 10 am-12 noon; GWCC, Level 2, opposite Room 265W Student T-shirts and refreshment breaks sponsored by HiFusion, Inc.

#### AWARDS AND PRESENTATIONS

Each year at NECC, we are pleased to recognize and present a number of honored student and educator awards during the keynote sessions (8:30-9:45 am):

#### Monday, June 26, 2000

Compaq Education Grants, sponsored by Compaq Computer Corporation.

#### Tuesday, June 27, 2000

- ThinkQuest Junior Team, sponsored by Advanced Network & Services, Congratulations to "Best-of" Contest winners: teachers Cynthia Lang and Amy Gill-Price and students Chelsea, Lianna, Timothy, Daniel, Colin, and Justin.
- Multimedia Mania, sponsored by ISTE's HyperSIG. The winning teachers are presenting Multimedia Mania, Tuesday, 1:30-2:30 pm, Room 165W. Congratulations, Mark Rice, Stringer, Michigan; Arnie Covey, Waterloo, Ontario, Canada; and Mary Sippel, Neufane, New York.

#### Wednesday, June 28, 1999

- Research Paper Award sponsored by ISTE's SIGTE. The winners, Kara Dawson and Aileen Nonis, will present a session based on their paper, Preservice Teachers' Experiences in a K-12/University Technology-Based Field Initiative: Benefits, Facilitators, Constraints, and Implications for Teacher Education, Wednesday, 10:30-11:30 am,
- 2000 Outstanding Technology-Using Leader Award sponsored by ISTE. Congratulations Richard Feutz, Northwest Council for Computers in Education, Brainbridge, Washington!
- 2000 Outstanding Technology-Using Educator Award sponsored by ISTE. Congratulations Sharon Dollice, Michigan Association for Computer-Related Technology Users in Learning, Grand Rapids, Michigan!
- Leadership in the Classroom Award, sponsored by Tech Corporation. Congratulations, Joan Kay Goble, Camelton, Indiana, and Susan Hedlun Flentie, Lewiston, Montana!

#### **AUXILIARY MEETINGS/ACTIVITIES**

- PT3 GRANTEES MEETING (BY INVITATION), THURS., JUNE 22, 5-7 PM; FRIDAY-SUNDAY, 8 AM-4 PM, SHERATON ATLANTA HOTEL
- **EDUCATION FOR A SUSTAINABLE** FUTURE SYMPOSIUM (PREREGISTRATION ONLY, SEATS MAY BE AVAILABLE.) SATURDAY-SUNDAY, JUNE 24-25, 9 AM-4 PM, OMNI HOTEL, BARRINGTON ROOM
- ISTE MINORITY LEADERSHIP SYMPOSIUM (BY INVITATION), SATURDAY, JUNE 24, 9 AM-5 PM, WESTIN PEACHTREE PLAZA.
- · COMPUTER SCIENCE AND INFORMATION TECHNOLOGY SYMPOSIUM 2000 (BY INVITATION). SUNDAY, JUNE 25, 8:30 AM-5:30 PM, WESTIN PEACHTREE PLAZA
- ISTE LEADERSHIP SYMPOSIUM 2000 (BY INVITATION), SUNDAY, JUNE 25, 8 AM-6:30 PM WESTIN PEACHTREE PLAZA
- U.S. DEPARTMENT OF EDUCATION (BY INVITATION), SUNDAY, JUNE 25, 3-5 PM, GWCC, ROOM 366W
- **■** GEORGIA SUPERINTENDENTS & SCHOOL BOARD MEMBERS MEETING (BY INVITATION) MONDAY, JUNE 26, 10 AM-1 PM, OMNI, MIMOSA & RUTHERFORD ROOMS
- DEKALB COUNTY MEETING (BY INVITATION), MONDAY, JUNE 26, 11 AM-12 NOON, GWCC, HALL G
- CONGRESSIONAL HEARING ON WEB-BASED EDUCATION (OPEN), MONDAY, JUNE 26, 1-3 PM, GWCC, HALL G
- "POWER TO LEAD" SIMULATION, BELLSOUTH FOUNDATION (BY INVITATION), MONDAY, JUNE 26, 1-4 PM, OMNI, MIMOSA ROOM
- ALABAMA TECH COORDINATORS MEETING (BY INVITATION) MONDAY, JUNE 26, 5-6 PM, GWCC, ROOM 364W
- NECALIGHTS RECEPTION (BY INVITATION), TUESDAY, JUNE 27, 4-5:30 PM, OMNI, GREENWOOD ROOM
- U.S. DOE SESSION ON ASSISTIVE TECHNOLOGY, TUESDAY, JUNE 27, 5:45-6:45 PM, GWCC, BALLROOM IV
- MISSISSIPPI DEPARTMENT OF EDUCATION MEETING (BY INVITATION), TUESDAY, JUNE 27, 5:45-6:45 PM, HYATT REGENCY HOTEL, BAKER ROOM



#### INTEGRATING EDUCATION **TECHNOLOGIES FOR A SUSTAINABLE FUTURE SYMPOSIUM**

#### **Attention K-12 Teachers**

& Administrators! Discover how you can be part of equipping students throughout the nation with the skills, knowledge, character, and vision they need to become productive citizens who contribute to a sustainable, informationrich future.

Seats may still be available in this twoday preconference event presented and organized by Education for a Sustainable Future, Cobb County's Technology Innovation Challenge Grant, and The Center for a Sustainable Future (a division of Concord Consortium).

#### This event will showcase:

- · the integration of technology into performance-based units on sustainability,
- · leading-edge professional development opportunities, and
- · Web-based dissemination strategies.

#### Participants will take part in:

- · large-group sessions with input from leading educational technology specialists, software developers, pedagogical experts, and international leaders in sustainability;
- · interactive presentations given by K-12 classroom teachers who have developed and implemented a variety of multidisciplinary units;
- opportunities to learn about exciting new netcourses for teachers and students that will be available as pilots for Fall 2000, and
- · small group, hands-on lab sessions that will introduce participants to several new, freely-available software packages.

**DATE/TIME:** June 24-25, 9 am-4 pm (breaks included, lunch on your own); LOCATION: Omni Hotel, \$50. Space is limited to 100 participants.

#### CEU AND SDU REGISTRATION

Continuing Education Units (CEUs) and Staff Development Units (SDUs) will be offered by the Georgia Staff Development Council and Georgia State University Continuing Education. Information and registration is available at On-Site Registration during the dates and times listed below.

CEU/SDU Registration Hours: Monday, June 26, 2-5 pm; Tuesday, June 27, 10 am-5 pm; Wednesday, June 28, 9 am-12 noon

#### (ISTE) INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION SOCIETY MEMBERSHIP/ BUSINESS MEETINGS

For membership information, please visit ISTE's Web site: www.iste.org

	Peachtree Plaza	
The following meetings will be held at the	ne GWCC, Room 164W.	
ISTE Membership Meeting	Monday, June 26, 12:30-1:45 pm	
HyperSIG–Multimedia/Hypermedia	Monday, June 26, 3:30-4:45 pm	
SIGTC-Technology Coordinators	Tuesday, June 27, 10:30–11:45 am	
SIG/Tel-Telecommunications	Tuesday, June 27, 1:30-2:45 pm	
SIGTE-Teacher Educators	Tuesday June 27, 3–4:15 pm	

Saturday, June 24, 8am-5pm, Westin

Wednesday, June 28, 10:30-11:45 am

#### KIDS' AEROSPACE CAMP AT GEORGIA TECH

This three-day, supervised science program for youth entering Grades 4-8 will take place on the Georgia Tech campus, 8 am-4 pm, June 26-28. Transportation to and from the GWCC will be provided. Please note that on-site registration for this event will not be available. See page 12 for more details.

#### CLOSING SESSION



ISTE Affiliates Meeting

SIGCS-Computer Science

Join us for a preview of Chicago's NECC 2001: Building on the Future, and for a drawing of special prizes including hardware, software, and an airfare/registration package for NECC 2001! Must be present and have photo ID to win.

Wednesday, June 28, 4:15-5 pm, GWCC, Hall G

### THANK YOU **VOLUNTEERS!**

IN ADDITION TO OUR CONFERENCE AND PROGRAM COMMITTEES, NEARLY 1,200 ADDITIONAL VOLUNTEERS HELP CREATE A TERRIFIC AND MEMORABLE NECC EXPERIENCE FOR PARTICIPANTS.



# ON-SITE INFO & SERVICES

#### NECC EVENT TICKETS

Participants taking preregistered tours and events will receive event tickets along with their registration badges. For workshops, Make & Take sessions, the conference luncheon, tours, and the zoo, your event ticket is all you need to present at your event to gain admittance. Those attending the Saturday night Braves game need to exchange their badge ticket for a stadium ticket at at the Event & Workshop Tickets Counter at On-Site Registration. Tickets may be available for some events, including workshops. Please check at On-Site Registration.

### "ASK ME" INFORMATION VOLUNTEERS

Teams of NECC 2000 volunteers will be available during the conference to provide attendees with quick answers, directions, and other guidance as needed. Look for the purple "Ask Me" signs!

#### ATLANTA AMBASSADORS

Downtown Atlanta is a safer, cleaner place to visit because of the Downtown Improvement District's Ambassador Force, a 50+ person hospitality/security group that helps the Atlanta Police Department patrol downtown and also assists visitors with helpful information about the city. Look for team members wearing white helmets in the downtown area—they are noted for their friendliness, hospitality, and concern for those who work, live, and visit Atlanta. The force covers two shifts per day on 16 walking beats in the 120-block Downtown Improvement District.

#### AUDIOTAPING

Many of the NECC 2000 Program Sessions are being recorded on audiotape and are available for sale to NECC 2000 attendees during and after the conference. Sales are located in the public space across from Room 160W (follow the signs!). In most instances, session material will be available within one hour of the session's end. An order form for tapes has been included in each registration bag and will be available on the NECC Web site following the conference. Sessions that are being taped will be denoted with a 🖭 icon.

#### CAFÉ CONNECT & CREATE SOMETHING

Join us at the BellSouth Foundation's Café Connect & Create Something, located beneath the escalators between the West lobby and the main registration area. This area will be available throughout the conference for attendees to check e-mail, surf the Web, plan their schedules using our online Web Conference Planner, and learn more about how the BellSouth Foundation is supporting teachers in the southeast United States.

#### E-MAIL STATIONS

NECC 2000 is happy to provide attendees with high-speed Internet, e-mail, and Web access from approximately 200 workstations located at the West meeting room levels. Access will be available beginning Saturday afternoon, June 24, and will continue throughout the conference. Connectivity and PC hardware is provided by Lightspan, Inc. and Gateway. Macintosh hardware is provided by Apple.

#### FOOD SERVICE

There are several food service options available within the GWCC and at the Omni Hotel's Food Court. Food concessions are also offered in Exhibit Halls D, E, and F. Stop by the Restaurant Information Booth in the lobby for a listing of local eateries.

#### HOTEL SHUTTLE SERVICE

Shuttle service, sponsored in part by Sun Microsystems Computer Corporation, will be available between official NECC 2000 conference hotels and the GWCC. Please see the shuttle schedule on page 11 for hours of operation and boarding details. All conference shuttles will arrive at and depart from the main entrance of the GWCC. Shuttle fliers are available at the NECC 2000 Info Booth and at the Shuttle Info Booth in the transportation staging area. Inquire at your hotel lobby for the pickup location and times for your particular hotel.

IMPORTANT PHONE NUMBERS

#### PRESS ROOM

404.222.6002 404.222.6003 404.222.6004 (FX)

#### HOUSING BOOTH

404.222.6007

INFORMATION

404.222.6008

COMMITTEE HEADQUARTERS

404.222.6000 404.222.6001

#### LOST & FOUND

The NECC 2000 Information
Booth, located in the main
registration area, will maintain
a Lost & Found box. Please
bring all found items here, and
check with the booth staff for
items you may have lost or
misplaced. Any unclaimed items
will be shipped to the NECA
Headquarters office in Oregon
following the conference.

#### NON-SMOKING

We ask that NECC 2000 participants refrain from smoking within the conference facility. Your cooperation is appreciated!

### **BEST COPY AVAILABLE**

WWW.NECCSITE.ORG



VELCOME TO NECC 2000

**NECC CD-ROM** 

NECC 2000 registrants

receive a commemorative

registration bags. The CD

workshop and conference

session, as well as the

conference Research

contains descriptions of each

Proceedings and PDF files of

the Final Program and Exhibit

Guide. Additional copies of

the CD are available at

On-Site Registration and

Society for Technology in

Education) after the

conference, for \$5

(www.iste.org) .

through ISTE (International

dual-platform CD-ROM in their

# ONSITE INFO & SERVICES

#### ON-SITE CONFERENCE PLANNER

The Conference Schedule Planner System, sponsored by Chancery Software, gives attendees the opportunity to use the Internet to view the conference schedule and plan their daily itinerary. Attendees can:

- see up-to-the-minute information on scheduled activities;
- query the system by time, date, topic, and presenter;
- · store their itineraries on the system and revise them as needed;
- · have the system identify schedule conflicts;

Access the planner through the NECC Web site (www.neccsite.org) using one of the many e-mail stations throughout the GWCC or in the BellSouth Foundation's Café Connect & Create Something.

#### DAILY NEWSLETTER

Be sure to pick up the NECC daily newsletter to find out about conference highlights and session changes. The newsletter is available each day at the registration counters, the keynote sessions, and the NECC 2000 Information Booth.

#### PRESS ROOM/LOUNGE

NECC 2000 will provide members of the national, regional, and local media with a multiactivity Press Room located in the GWCC, Room 163W. Local and long distance (using credit card) telephone service will be available, as will Ethernet and T-1 speed Internet access. The Press Room/Lounge will be open and staffed from 5–7 pm Sunday, 8 am–6 pm Monday and Tuesday, and 8 am–2 pm on Wednesday. For conference updates, a schedule of press-related events, access to equipment reserved specifically for the press, and other special requests, please show your press credentials in the Press Room.

### SERVICES FOR PERSONS WITH DISABILITIES

If you require accommodations to attend or participate in NECC 2000, please ask for Jane Royall or Kim Hartsell at the NECC 2000 Information Booth. Real-time captioning and sign language interpreters will be available for each of the keynote sessions. For those sessions not captioned, interpreters participants who are deaf or hard of hearing will be provided on request. A limited number of wheelchairs and assistive listening devices will be available on request. Please note that it may not be possible to honor requests for accommodations that are made on-site.

#### SACK SITTERS, SHIPPING, AND STORAGE SERVICE

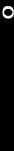
The Sack Sitters booth is located on the Exhibit Hall level, between Halls D and E in the connecting corridor. This service will provide:

- · UPS Shipping: Next Day, Second Day, Three Day, and Ground;
- International Shipping;
- "Rent-A-Box" for session materials and exhibit goodies. A one-time fee buys overnight storage and continual accumulation for the duration of the conference;
- · All packaging material purchase, including boxes, packing tape, and labels;
- · A full-time Traces and Claims office to locate and resolve lost or damaged parcels;
- Sack Sitters accepts Visa, MasterCard, Amex, Diners Club, checks, and cash, and they
  can ship on UPS accounts.

Hours of operation are Monday, June 26, 9 am-6 pm; Tuesday, June 27, 9 am-5:30 pm; and Wednesday, June 28, 9 am-4:30 pm.

#### LAST-DAY LUGGAGE STORAGE

For your convenience, luggage storage services will be provided by the GWCC on Wednesday, June 28, in the On-Site Registration area, 7 am-6 pm. \$1.50/bag or jacket.

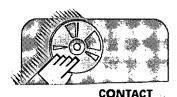




# HOTELS & SHUTTLES

# SHUTTLE SERVICE (BETWEEN CONFERENCE HOTELS AND THE GWCC/EVENING EVENTS)

Friday, June 23	5–8 pm
Saturday, June 24	-
Monday, June 26	′ am–7 pm
Tuesday, June 27	am-7 pm
Wednesday, June 28 7	am–6 pm



INFORMATION &
SUMMARIES FOR ALL
MAIN SPEAKERS IS
AVAILABLE ON THE
NECC CD-ROM!

(THE CD IS FREE TO ALL ATTENDEES! SEE YOUR REGISTRATION BAG.)

Unless otherwise noted, shuttles will depart from and return to the main entrance of the Georgia World Congress Center (GWCC) every 15–20 minutes (every 30 minutes Friday, June 23). This schedule is subject to revision and was accurate as of press time. Please do not forget to check the GWCC and your hotel lobbies for up-to-date frequency, dates, and changes! Though this schedule may also be affected by traffic conditions and other events taking place in the Atlanta downtown area, every effort is being made to ensure that your transportation service is timely, comfortable, and consistent. Please let our service providers, Atlanta Arrangements, know if your experience is otherwise.

Schedules are available at the transportation desk near the entrance to the west concourse and at the NECC 2000 Information Desk in the On-Site Registration area.

NECC 2000 transportation service is sponsored in part by Sun Microsystems Computer Corporation.

#### NECC 2000 HOTELS

Hyatt Regency Atlanta (HQ)
Atlanta Marriott Marquis
Courtyard by Marriott Downtown Atlanta 175 Piedmont Avenue, NE
Days Inn Atlanta
Embassy Suites
Fairfield Inn Downtown Atlanta
The Georgian Terrace (Midtown)
Hampton Inn and Suites Atlanta Downtown 161 Spring Street
Hilton Atlanta and Towers
Holiday Inn Downtown Atlanta 101 International Boulevard
Holiday Inn Midtown North
Omni Hotel at CNN
Ramada Hotel Downtown 70 John Wesley Dobbs Avenue, NE 404.659.2660
Ramada Inn & Conference Center (Midtown) 418 Armour Drive, NE 404.873.4661
Renaissance Atlanta Hotel Downtown 590 West Peachtree Street 404.881.6000
Ritz Carlton Atlanta Hotel
Sheraton (Downtown)
Suite Hotel Underground
Westin Peachtree Plaza
Wyndham Atlanta Hotel

MORE HOTELS
MAY HAVE BEEN
ADDED AFTER
PRESS TIME OF
THIS PROGRAM.
PLEASE CHECK
WITH THE
HOUSING DESK IN
THE ON-SITE
REGISTRATION
AREA FOR MAPS,
ADDITIONAL
ADDRESSES, AND
PHONE NUMBERS.



# NECC 2000 TOURS

#### NECC 2000 TOURS

There is a lot to enjoy in Atlanta...from major league baseball to hikes to the Atlanta Zoo, to a number of historical and cultural landmarks. Atlanta and its surrounding region offer a unique variety of opportunities to make your visit memorable. Please join us on these specially selected treks that highlight Atlanta's many attractions and destinations. Tours require prepayment and advance reservations. Tickets for tours that still have space available may be purchased at On-Site Registration in the GWCC. Tour guides, with signs for each tour, will meet participants inside the west entrance to the GWCC 15 minutes prior to departure.

DAY	NAME	TOUR TIME	BUS BOARDING
Saturday, June 24	. A Taste of the Peach	. 9 am–1 pm	8:45 am
	Spectacular Stone Mountain Park	6 pm–12 am	5:45 pm
Sunday, June 25	. Covington's Mansions & Magnolias	9 am–3 pm	8:45 am
,	Atlanta's Famous Firsts	. 1 pm–5 pm	12:45 pm
	Georgia's Stone Mountain	. 1 pm–5 pm	12:45 pm
Tuesday, June 27	. Atlanta's Famous Firsts	. 1 pm–5 pm	12:45 pm
Wednesday, June 28	. A Taste of the Peach	9 am–1 pm	8:45 am

#### TAKE YOURSELF OUT TO THE BALL GAME!

Atlanta Braves versus Milwaukee Brewers Saturday, June 24, 7:10 pm, Turner Field

Those who have purchased tickets for Saturday night's Braves/Brewers game need to exchange the badge ticket received with their NECC 2000 registration for a stadium ticket at the Event & Workshop Tickets Counter at On-Site Registration during regular registration hours Friday, June 23, and Saturday, June 24. Some tickets will be available at On-Site Registration—please check. Transportation to and from Turner Field is not provided, but you can get directions at www.atlantabraves.com/braves\_tf\_directions/0,1640,13,00.html.

A seating chart for the stadium is available at www.atlantabraves.com/braves\_schedule/0,1629,0,00.html.

#### NECC 2000 KIDS' AEROSPACE CAMP AT GEORGIA TECH

- Monday, June 26, \$50
- Tuesday, June 27, \$50
- Wednesday, June 28, \$65

Fees include all materials and supplies, daily lunches, transportation, T-shirt, admission fees to Museum of Aviation (all days), and transportation to and from the Museum of Aviation in Warner Robins, GA (Wednesday only).

This three-day supervised science program for youth entering Grades 4–8 will take place on the Georgia Tech campus, 8 am-4 pm, June 26–28. Participants will explore flight and space by completing fun hands-on aviation/aerospace activities including construction of kites, hot-air balloons, gliders, rockets, and much more. Campers will receive free posters and software. A trip to the Museum of Aviation in Warner Robins, Georgia, is included on the third day.

Attendees may attend one, two, or three days of the program. Buses for the Kids' Camp will depart each day at 8 am and will drop students off in the bus loading/unloading area in front of the Georgia Dome each afternoon at 4 pm. Chaperones will stay with students until they have been picked up by their parents or legal guardians.



#### WORNING WORKSHOPS

8:30-11:30 am

#### **AFTERNOON WORKSHOPS**

1:30-4:30 pm

#### **FULL-DAY WORKSHOPS**

9 am-4 pm



Georgia Showcase

Workshops feature local presenters and/or topics of specific interest to Georgia teachers, administrators, technology coordinators, and specialists.

#### WORKSHOP TRANSPORTATION

Transportation is provided to all off-site workshops. Buses will board in front of the Georgia Dome just west of the GWCC main entrance. Please check below for your workshop's exact bus loading and departure times.

IMPORTANT! Some buses depart as early as one hour prior to workshop start time, so you are advised to plan accordingly. *Transportation will not be provided for participants who miss their buses.* 

#### OFF-SITE WORKSHOP BUS SCHEDULE

Location	<i>Morning</i> Load/Depart	<i>Full-Day</i> Load/Depart	<i>Afternoon</i> Load/Depart
CEISMC	7:50 am/8 am	8:20 am/8:30 am	12:20 pm/12:30 pm
Clayton	7:20 am/7:30 am	7:50 am/8 am	. 11:50 am/12 noon
F3 Lab	7:50 am/8 am	8:20 am/8:30 am	12:20 pm/12:30 pm
		7:50 am/8 am* 1 8:05 am/8:15 am	
Pace	7:35 am/7:45 am	8:05 am/8:15 am	12:05 pm/12:15 pm
Logosium (SU	JF249) @ UGA	7:50 am/8 am	N/A
* Continuous	shuttles between the GWC	C and GSU starts at 7:30 an	and runs until 4:30



and operated by ISTE
(International Society for
Technology in Education). More
information about how ISTE
connects educators worldwide to
dependable resources can be
found on the ISTE Web site at
www.iste.org.

# WORKSHOP LOCATION ABBREVIATIONS

pm; every 15-20 minutes.

Clayton	
F3 Lab Foundations for the Future Forum	
CEISMC LabGeorgia Institute of Technology's Center for Edu Integrating Science, Mathematics and Computing	
GWCC Georgia World Congress Center	
GSUGeorgia State University	
A&H = Arts and Humanities Building	
COE = College of Education	
CS = Classroom South Building	
LovettThe Lovett School	
PacePace Academy	
UGAUniversity of Georgia-Athens	



#### SATURDAY MORNING

Tips and Strategies for Enhancing Student and Teacher Multimedia Presentations

Lyneil Burmark, Lou Fournier

Seminar/Demo

GWCC, Room 256W

#### **SAA101**

#### **DVD Technology: Practical Applications** for Every Classroom

Ann Cunningham, Sandra Benedetto, Karen Butler (Exhibitor-sponsored workshop)

Seminar/Demo

GWCC, Room 264W

#### **SAA102**

#### **Putting Total Cost** of Ownership to Work

Sara Fitzgerald, Betty VanDam, Marla Davenport (Sponsored by the Consortium for School Networking [CoSN])

Seminar/Demo

GWCC, Room 254W

#### **6** SAA103 Assessing Technology

Tricia Howell, Gale Hulme, Katle Lovett, Georgia Barnwell, Sandy Ewanowski, Mary Mason, Sandi Glass

Seminar/Demo

GWCC, Room 255W

#### **SAA104**

#### Five Hundred Miles—Teaching Persistence, Developing Expertise

Jamie McKenzie Hands-On

GWCC, Room 265W

#### **SAA105**

#### The School Odyssey: Using Digital Portfolios

for Assessment and Accountability

David Niguidula, Hilarie Davis

Hands-Ön

GSU, CS305

#### SATURDAY AFTERNOON

#### Electronic Portfolios = Multimedia Skills + Portfolio Development

Helen Barrett Seminar/Demo

GWCC, Room 264W

#### **SAP113**

#### Reaching Every Learner: Using Multimedia and Multiple Intelligences

Lynell Burmark, Lou Fournier

Seminar/Demo GWCC, Room 256W

#### SAP114

#### Beyond HTML: Web Site Design

Chris Clark

Hands-On GSU, COE Open

#### **SAP115**

#### Teaching with the Internet

BEST COPY AVAILABLE

Sheila Gersh

Hands-On

GSU, CS305

#### **SAD117**

#### **Imaging and Imagination: Visual Tools** in the K-12 Classroom

Larry Johnson, Annette Lamb

GWCC, Room 254W Seminar/Demo

#### **SAP118**

#### PK-2? What's Out There for You?

Gail Lovely

Seminar/Demo

GWCC, Room 255W

#### **SAP119**

#### Module Maker-Web-Based Learning and Online Research Modules

Jamie McKenzie

Hands-On

GWCC, Room 265W

#### **SAP120**

#### Responsible Use of the Internet in Schools: Legal and Ethical Issues

Nancy Willard Seminar/Demo

GWCC, Room 257W

#### SATURDAY FULL-DAY

#### Go Anywhere Multimedia: Digital Cameras in the Classroom

Molly Carbo, Mark Delano, Nori Murphy, Greg Peck Hands-On Clayton, Room 14

#### Technology Grantseekers' Toolkit for the New Millennium

Gary Carnow

Seminar/Demo GWCC, Room 260W

#### **SAF128**

#### Integrating Technology into the K-12 **Classroom through Interactive Projects**

Edna Gentry, Donna Cauley, Jane Jones GSU, CS401 Hands-On

#### **SAF129**

#### In 3, in 2, in 1 ... We're Live!

Virginia Jewell

Hands-On

GWCC, Room 262W

#### **SAF130**

#### Online Learning for Teachers and Students

Kirsten Johnson, Barbara Treacy, Susie Metrick Hands-On GSU, CS403

#### **SAF133**

#### Why Did the Robot Cross the Road? Come Find Out!

Steve Lindaas, Alison Wallace, Mary Beth Kelley-Lowe, Terry Feltis Hands-On Pace, Lab 2

#### **SAF134**

#### Query Power: Using Microsoft® Access in a Constructivist Classroom

John McGowan Hands-On

GWCC, Room 263W

#### **SAF135**

#### **Helping Your Students Create Projects** with Microsoft® Office and the Web

Tina Mondale Hands-On

GSU, COE100

#### **SAF139**

#### Is It Working? Designing a Technology **Evaluation and Assessment Plan**

Jeff Sun

Hands-On

Pace, Lab 1

### **O** SAF140

### **Teachers Creating Classroom**

**Web Pages** Jeff Tharpe

Hands-On

GSU, COE252

#### **SAF141**

#### Putting It All Together: Technology, Teaching, Lessons and Learning

Lois Thornberg Hands-On

Clayton, Room 4

#### **SAF142**

#### **WebCT: The Complete Introductory Training Session**

Anna Hillman, David Wells

Hands-On

GSU, COE130

#### **SAF143**

#### Standards-Based, Student-Centered, **Scalable Professional Development**

Art Wolinsky, Tom March

Hands-On

GSU, COF106

#### **SAF146**

#### ThinkQuest®: The Coaches' Workshop

Robert Sibley, David Warlick, Nancy Velez (Sponsored by ISTE's Organization Affiliate Executive Board) GWCC, Room 261W Seminar/Demo

#### SUNDAY MORNING

## **O** SUA200

#### Using Multimedia to Enhance **Learning and Motivate Students**

Salvatore Angelica

Hands-On GSU, CS403

#### **SUA202**

#### **American Memory Digital Primary** Resources: Connect the Past,

Present, and Future

Leni Donlan

(Sponsored by the National Council for the Social

Studies [NCSS])

Hands-On GSU. COE130

#### SULAPOR

#### You Need a Little Inspiration<sup>6</sup> to Solve Your Problems!

Lestie Flanders

Hands-On

Pace, Lab 1

#### **SUA204**

#### Staff Development for the Integration of Technology

into Instructional Strategies

Terri Jenkins, Lynn Baber Seminar/Demo

GWCC, Room 256W

#### **SUA205**

#### WebQuests:

Taming the Wild, Wild Web

Pamela Kuck Seminar/Demo

GWCC, Room 269W



WELCOME TO NECC 2000

#### **SUA206**

#### PowerLearning—Creating Student-Centered, Problem-Based Classrooms

Jamie McKenzie

Hands-On

GWCC, Room 265W

#### **SUA207**

#### PowerLearn:

#### **Best Practice and New Trends** in Technology Staff Development

Len Scrogan

Seminar/Demo

GWCC, Room 362W

#### SUA208

#### Make It with Microsoft® Office

Vicki Sharp, Richard Sharp

Hands-On

GSU, COE246

#### **SUA209**

#### **Building Videoconferencing Activities** for the K-12 Classroom

Stan Silverman, Gene Silverman, Fred Podowski,

Paula Pisano, Nancy Schempp Seminar/Demo

GWCC, Room 264W

#### **SUA210**

#### Creating Successful Proposals for **Educational-Technology Projects**

Jeff Sun, Heather Hurley

Seminar/Demo

GWCC, Room 255W

#### **SUA211**

#### **Understanding Digital Images**

Sharon Yoder, Irene Smith

Seminar/Demo

GWCC, Room 260W

#### SUNDAY AFTERNOON

#### Weaving It All Together:

#### A Professional Development Tapestry

Jackie Burniske, Joan Gil, Vicki Dimock

Seminar/Demo GWCC, Room 269W

#### **SUP216**

#### **Gearing Up for Online Projects**

Maria Davenport, Rachel Brown, Lyne Motylinski

GSU, COE246 Hands-On

#### **SUP218**

#### PowerLearning—Creating Student-Centered, Problem-Based Classrooms

Jamie McKenzie

Hands-On

GWCC, Room 265W

#### **SUP219**

#### Student Leadership, Technology, and **Empowerment: A Program That Works**

Rae Nites, Jayne James

Hands-On

GSU, COE130

#### **SUP221**

#### Communicate, Collaborate, and Celebrate: Reaping the Benefits of the Internet

Ladd Skelly

(Exhibitor-sponsored workshop)

Hands-On

#### **SUP222**

#### Music In Education™: The First Music **Classroom Network for Instruction**

Michael Skinner, Shelby Fullerton

(Exhibitor-sponsored workshop)

GWCC, Room 255W Seminar/Demo

#### SUP223

#### Animation with the HyperAnimaniacs

Kate Vanderhorst, Rod Rychliski

Pace, Lab 1

#### **SUP224**

#### Framing the Grant: Teaching, Not Technology

Paola Williams, Watts Margit

(Sponsored by ISTE's HyperSIG) Seminar/Demo

GWCC, Room 256W

GSU, CS403

#### SUNDAY FULL-DAY

### **Create Your Own Electronic**

**Teaching Portfolio** 

Helen Barrett

Hands-On

Clayton, Room 4

#### **SUF226**

#### Technology Coordinators: Coping, Thriving, Sharing

Willis Binnard

(Sponsored by ISTE's SIGTC) Seminar/Demo

GWCC, Room 254W

#### **SUF228**

#### Bytes, Camera, Action, MovieWorks!

Corinne Carriero, Ellen Robertson

Hands-On GWCC, Room 262W

#### **Creating Web-Based Courses**

with WebCT

Chris Clark

(Sponsored by ISTE's SIG/Tel)

Hands-On

GSU, CS305

#### SUF231 **Every Child Can Learn to Read**

### with Technology

Tricia Cooling, Stacey Bennett

Hands-On GSU, COE106

#### **SUF233**

#### **Creating Web-Based Lessons:** WebQuests and Other

**Internet Projects** 

Miguel Guhlin, Jim Baldoni

Hands-On GSU, COE116

#### **SUF234**

#### Planning for Success—Developing **Effective Strategic Long-Range Plans**

lan Jukes, Ted McCain Seminar/Demo

GWCC, Room 257W

#### **SUF236**

#### **New and Emerging Competencies for Building-Level Technology Champions** (formerly Improving Teaching and Learning through Technology at the Campus Level)

Keith Krueger

(Sponsored by the Consortium for School Networking [COSN] with support from BellSouth)

Seminar/Demo

GWCC, Room 267W

#### **SUF237**

#### **Creating Database-Backed Web Sites** with FrontPage® 2000

Todd McIntire

Hands-On GSU, COE100

#### **SUF238**

### Virtual Reality in and out

of the Classroom Jim McKeown, Roger Reed

Seminar/Demo

GWCC, Room 268W

#### Beginning Photoshop®

Bonnie Meitze

Hands-On GSU, A&H211

### **SUF240**

#### The Classroom and Beyond: **Integrating Handheld PCs**

and Digital Cameras

Gregory Peck, Mark Delano, Molly Carbo,

Nori Murphy

Hands-On Clayton, Room 14

#### **SUF243**

#### Staff Development and the Web: Making It Work for Teachers

Neal Strudler, Marianne Handler

(Sponsored by ISTE's SIGTE) Hands-On GWCC, Room 263W

#### **SUF244**

#### Going Bananas over Dreamweaver®

Manorama Tataiver

Hands-On GSU, COE Open

#### **SUF245**

### The Digital Camera in the Classroom

Andy Ventress

Hands-On F3 Lab

#### **SUF247**

#### ClassWebs: Cultivating the Internet for Learning

David Wartick

Hands-On

Seminar/Demo

Cynthia Duniap, Anne Knight

GSU, COF252

GWCC, Room 261W

#### **SUF248**

#### Professional Development Planning: Can You Succeed without It?

SEATS WAY STILL BE AVAILABLE—CHECK @ ON-SITE REGISTRATION



#### SUNDAY 8:30 AM-7 PM

#### **SUF249**

#### Logosium 2000 Full-Day Conference and Social Dinner

Gary Stager (Sponsored by ISTE's SIGLogo) Hands-On

UGA

#### MONDAY MORNING

#### **@** MA301 Are You Connected? **Everyday Internet Use**

Sheila Barnes, Lynne Purcell, Lisa Ciardulil Hands-On GSU, COE106

#### **MA302**

#### SCR\*TEC's Profiler: Supporting **Collaboration and Targeting Staff Development Needs**

Christina Biauer Hands-On

GWCC, Room 262W

### Using the InTech Model in the **Student-Centered Classroom**

Melody Bonnette, Sandy Swartz Hands-On GSU, COE100

#### **MA304 Web Tools**

Laren Brooks, Lynnette Morrison

Hands-On GSU, CS305

#### **MA305**

#### Use AppleWorks® with Elementary Kids

Janet Caughlin, Connie Baxter

Hands-On

MAZOS

3-D Graphics Kids Love! Robert Frazier

Hands-On

Clayton, Room 4

Pace, Lab 2

#### **Connecting Multiple Intelligences** and Technology

Jeannie Heacock

Hands-On

Lovett, Lab C

#### **MA310** From Digital to Analog: Videotaping Your PowerPoint® Presentations

Crill Head, Glenda Miller

Hands-On

GSU COF252

#### **MA311**

#### **Technology-Assisted** Project-Based Learning

Anthony Jongejan, Kathy Buchanan Hands-On Clayton, Room 14

#### MA312

#### **Using Clay Animation** in Your Classroom!

Meiinda Koik, Nancy Smith, Mark Benno (Exhibitor-sponsored workshop) GWCC, Room 265W Hands-On

#### **MA313**

#### **Create and Manage Your Web Site** Using Net Objects Fusion<sup>6</sup> 5.0

Keith Mack, Karen Mack Hands-On

GWCC, Room 263W

#### **MA314**

#### Technology as a Tool for the **Elementary Social Studies Classroom**

LaRay Mason, Paulette Williams, Laurie Surles, Michael Berson, Sue McGinniss (Sponsored by the National Council for the Social Studies (NCSSI)

Hands-On

GSU, COE Open

GSU, COE116

Lovett, Lab D

GSU, CS403

GSU. A&H211

#### **⊘** MA316 PowerPoint\*: Bringing Method to the Madness

Phyllis Snipes Hands-On

#### MA318

#### Narrowing the Internet: Create a Web **Page Directing Student Learning**

Maria Narciso, Paul Tarantiles

Hands-On

#### **MA321**

#### Learn How to Host a Collaborative **Internet Project**

Susan Silverman

Hands-On

#### **MA347**

**Beginning Internet** 

John Richardson Hands-On

#### MONDAY AFTERNOOM

#### **SCR\*TEC Presents: Using Free Tools to** Create and Assess Web-Based Lessons

Douglas Adams, Jim Gardner, Christy Blauer GWCC, Room 263W

#### MP325

#### Acrobat<sup>e</sup> 4.0 Boot Camp for Education

Steve Adler Hands-On

Pace, Lab 1

GSU, COE106

#### From Information to Knowledge: Using Geographic Information Systems in Schools

Kristen Bjork, Patricia Wang-Iverson,

Elizabeth Biork

Hands-On

#### MP328

#### Technology in the Multidisciplinary Classroom—How Does It Work?

Linda Bloom

(Exhibitor-sponsored workshop)

Hands-On GSU, COE100

#### MP329

#### MarcoPolo: Internet Content Staff **Development Resources**

Todd Brekhus

(Exhibitor-sponsored workshop)

GSU, COE246 Hands-On

#### MP330

#### **Bring Learning to Life—Integrating Multimedia Sounds and Music into Student Projects**

Greg Butler, Kelly Starr Hands-On

GSU, COE130

#### **MP331**

#### The Image Connection: **Communicating Effectively** with Instant and Digital Images

Tom Crockett

(Exhibitor-sponsored workshop)

GSU, CS403 Hands-On

#### MP332

#### What Can You Do with a Graphing Calculator?

Ben Davis, Jimmy Bostock

Hands-On

GSU, COE252

#### The Fourth Dimension— Animating 3-D Worlds

Robert Frazier

Hands-On

Clayton, Room 4

#### **MP334**

A Quest for the Crossroads: WebQuests, Thinking Skills, and Technology

Jeannie Heacock

Hands-On Lovett, Lab C



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17

### WORKSHOPS

#### MD335

#### Research, Replication, Results: Integrating Technology from Georgia to Louisiana Classrooms

Adrianne Hunt, Joana Dieterich, Sheila Talamo, Linda Whitacre Hands-On GSU, COE116

#### **MP336**

#### **Bring Visual Learning into the** Classroom with Inspiration®

Robin Christensen, Susan Krug (Exhibitor-sponsored workshop) Hands-On

F3 Lab

#### **MP337**

#### **Snatching Moments: Connecting with the Curriculum Integration Specialist Within**

Christy Johnston (Exhibitor-sponsored workshop) Hands-On

GSU, CS401

#### MP339

#### **Setting Up and Maintaining** a Web Server for the Novice

Bradley Moore Hands-On

GSU, COE Open

#### **MP340**

### Pagemaker® 6.5: A Recipe for Success

Rae Niles Hands-On

GSU, A&H211

#### **MP341**

#### A Principals' and Administrators' **Guide to Leading and Evaluating Effective Technology Integration**

(Exhibitor-sponsored workshop)

Hands-On

GWCC, Room 262W

### MP342

#### Kids, Curriculum, and Technology: **Putting It All Together**

Linda Reynolds, Mike Barney Hands-On

Lovett, Lab D

#### **MP343**

#### Social Studies Inquiry through WebQuests: A Hands-on Opportunity for Exploration and Construction

Gail Ring, George Lipscomb, Stephanie Van Hover (Sponsored by the National Council for the Social Studies [NCSS])

Hands-On GSU, CS305

#### **MP344**

#### **Harnessing the Power** of Streaming Video

Samuel Shiffman

Hands-On

GWCC, Room 265W

#### **MP346**

#### Technology and the Curriculum: Creating a Virtual Resource Center

Carol Whelan, Alita Robertson, Margaret Curette, Hailey Davidson, Rachel Sellers

Hands-On **CEISMC Lab** 

#### TUESDAY MORNING

#### **Creating a Digital Portfolio**

Arnie Abrams

Hands-On

GSU, COE Open

#### TA402

#### Interactive, Dynamic Educational **Web Sites**

Teresa Bromley, Jo Lynn Allen, Linda Babb, Paula Duncan, Judy Parham Hands-On

GWCC, Room 265W

#### **TA403**

#### Moving beyond Multimedia Basics with Kid Pixe

Beverly Burks, Roberta Marshall, Regina Woods, Catherine Ritter

Hands-On

GSU, A&H211

#### **TA404**

#### Successful Curriculum Integration **Strategies Based around Application** Software

Greg Butler, Kelly Starr

Hands-On

#### **TA405**

#### Use AppleWorks® with Middle- and **High-School Kids**

Janet Caughlin

Hands-On

Pace, Lab 2

GSU, COE130

#### **TA407**

#### **Integrating Technology Successfully** into K-12 Curriculum

Don Henderson, Sheila Herd, Jack Podell (Exhibitor-sponsored workshop)

Hands-On

GWCC, Room 262W

#### **TA409**

#### Typography: Artistry with Words

Carol Kelly, Davis Brock

Hands-On GSU, COE106

#### **TA410**

#### Classroom Campfires: Don't Internet, Integrate!

Annette Lamb, Larry Johnson

Hands-On

#### TA412

#### Applying NASA Research to **Project-Based and Problem-Based** Curricula for Grades 4-12

Robert Myers, Laurie Ruberg

Hands-On

**©** TA413

### Create a WebCT Course!

Karen Oates

Hands-On

GSU, CS403

F3 Lab

GSU, COE100

### LEGO® MINDSTORMS™: Inexpensive,

**Easy Classroom Robotics** 

Timothy Phillips, Michael Phillips

Hands-On

GSU, COE252

### **♦** TA415

#### Internet-Enriched Language Arts

Lynne Purcell Hands-On

GSU, COE246

#### **TA416**

#### Meeting at the Crossroads: **Enhancing Cross-Curricular Projects with Technology**

Serena Roberts, Erin Thaler

Hands-On

GSU, CS305

#### **TA418**

#### SCR\*TEC Presents: **Creating Web-Capable Databases**

Using FileMaker™ Pro

Allen Steckelberg, Douglas Adams, Christy Blauer, Jim Nazworthy

Hands-On GWCC, Room 263W

#### **TA419**

#### Scanners and Their Applications

Thomas Toleston, Mary Jo Toleston

Hands-On GSU. COE116

#### TA421

#### **Internet Project-Based Learning** for the Classroom Teacher

B. Jean Weller, Kate Santhuff

CEISMC Lab Hands-On

#### The Network Is the School

Jim Woodell Hands-On

GSU, CS401

#### TUESDAY AFTERNOON

#### Help Students Learn from One **Another: Collaborative Learning** Tools in Action

Michelle Baker, Marge Cappo, Judith Levy Cohen (Exhibitor-sponsored workshop)

Hands-On Lovett, Lab D

### **TP426**

A Wild Ride: Technology Integration with Middle-School Classrooms@work

Hands-On

#### **TP427**

#### Electronic Portfolios for Teachers and Students: An Introduction to Electronic **Portfolios for Teachers and Students**

Nancy Becker, Bobbie Welch

GSU, COE Open Hands-On

Software Evaluation 101

**TP429** 

Warren Buckleitner Hands-On

GSU, COE130



#### TUESDAY AFTERNOON, CONT.

**Piecing Together the Engaged** Learning Puzzle

Constance Cassity, Louanne Smolin Hands-On GWCC, Room 263W

#### TP431

**Problem-Based Learning: Drawing from the Web Well** 

Hilarie Davis, Robert Myers GWCC, Room 265W Hands-On

#### **TP432**

**Getting your Database Online** with FileMaker™ 5.0

Lestie Fisher Hands-On

Pace, Lab 2

Tap in to Online **Professional Development** 

Judi Fusco, Patti Schank, Mark Schlager,

Hunter Gehlbach

Hands-On Pace, Lab 1

#### **TP434**

Eileen Gallagher, Yvette Chisom

**Technology Tools for Administrators** GSU, COE116 Hands-On

#### **TP435**

Weave Your Own Web Site

Wendy Marshall Hands-On GSU, COE106

**Teaching with Primary Sources** 

Donna Miller Hands-On

GSU, COE252

Travel USA: Technology Integration with Elementary Classrooms@work

Amy Pearl

Hands-On

GSU, COE246

#### **TP439**

**Standards-Based Teaching** and Assessment Strategies

Francesca Venning

(Exhibitor-sponsored workshop)

Hands-On GWCC, Room 262W

#### **TP441**

**Creating Virtual Tours with** QuickTime™ Virtual Reality

Denaya Wininger, Michael Wininger

Hands-On GSII A&H211

#### WEDNESDAY MORNING

Web Publishing for Teachers

Darlene Andre, Bruce Ahlborn

Hands-On Pace, Lab 1

#### WA501

Global Challenge: Technology Integration with High School

Classrooms@work

Anne Batey, Amy Pearl Hands-On

GWCC, Room 265W

GSU, A&H 211

#### WA502

**Transforming Schools through Technology Integration** 

Kristin Ciesemier, Seymour Hanfling, Jim Nazworthy, Bruce Hoffacker, Raynette Sanchez, Elizabeth Byrom GWCC, Room 263W Hands-On

#### **WA503**

Creating Web Graphics Using Adobe® Photoshop<sup>®</sup> 5.5

Leslie Fisher

Hands-On Pace, Lab 2

#### WASO4

**Creating Electronic Stories** 

Sheri Herod, Diane Allen, DeNeene Henderson,

Barbara Sanders Hands-On

WA507

**Innovative Strategies to Enhance Learning with Mobile Technologies** 

Francesca Venning

(Exhibitor-sponsored workshop)

GWCC, Room 262W Hands-On

**DON'T FORGET TO** 

**FILL OUT YOUR** 

CONFERENCE

**EVALUATION!** 

A FORM IS

INCLUDED IN EACH

CONFERENCE

REGISTRATION

TOTE BAG.

**COMPLETE YOUR** 

**EVALUATION** 

**AND RETURN IT TO** 

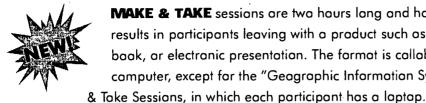
THE NECC 2001

**BOOTH!** 

**REST COPY AVAILABLE** 



SEATS IVAY STILL BE AVAILABLE-**CHECK @ ON-SITE REGISTRATION** 



WAKE & TAKE sessions are two hours long and have a hands-an component that results in participants leaving with a product such as a WebQuest, Web page, big book, or electronic presentation. The format is collaborative groups of three to a computer, except for the "Geographic Information Systems (GIS) for Educators" Make

Make & Take sessions require preregistration and payment of a \$10 fee. Check On-Site Registration for availability of these sessions.

### MONDAY MORNING

10 AM-12 NOON

#### MTM001

K-12 Videoconferencing for Teaching and Learning: Planning and Implementation Kirk deFord

#### MTM002

Wanted:

A Cross-Curricular Activity Becky Firth

#### MTM003

Electronic Me-Books: Helping Students Develop Language Skills Timothy Green, Jody Peerless

#### MTM004

Musical Crossroads: The Rhythm of Technology Jeanne Muñoz

#### MONDAY **AFTERNOON**

1:30-3:30 PM

#### MTM005

Take a Byte out of the Internet-Feeding Classrooms Betty Higdon

#### **MTM006**

The Internet and the Primary Student Emmett Mullins

#### MTM007

Create Web Graphics like the Professionals Carol Siwinski

#### **800MTM**

Making Your Teaching Portfolio a Teaching Tool: A Web-Based Approach Hong (Carol) Yin Sun

#### **MTM009**

Geographic Information Systems (GIS) for Educators John Kuglin, Chris Kuglin, Lauren Mackay

#### TUESDAY MORNING

10 AM-12 NOON

#### MTT010

WWW.Creating Curriculum Web Pages with FrontPage Express Sandy Beck, Kathy Adkins, Linda Spudic

#### MTT011

Supporting Problem-Based Learning Activities with Freeware Mary Burns, Victoria Dimock

#### MTT012

Mouse or No Mouse Tammy Donalson

#### MTT013

Tackling Technology Integration: No Athletic Gear Required Carmen Gonzales, Susan Bussmann, Kathrine Martinez Graham, Susan Smith

#### MTT014

Geographic Information Systems (GIS) for Educators John Kuglin, Chris Kuglin, Lauren Mackay

#### TUESDAY AFTERNOON

1:30-3:30 PM

#### MTT015

Virtual Reality for Real Learning Mark Christal, Nancy Allen

#### **MTT016**

Playing with Matches: Teaching to Standards without Getting Burned Terrie Gray, Brian Bridges, Mike Menchaka

Create a Scavenger Hunt Web Site Kathy Lincoln

#### **MTT018**

The Internet Book Club for K-12 Collaboration Bonnie Thurber, Bob Davis, Tamara McCulloch

Geographic Information Systems (GIS) for Educators John Kuglin, Chris Kuglin, Lauren Mackay

#### WEDNESDAY MORNING

10 AM-12 NOON

#### MTW020

Online Course Creation: Accessing Innovative Digitized Multimedia Resources

Lyn Swett Miller, Bert Ross, Ann Rose

#### MTW021

Nothin' on the Net: Pointing Students to Research Sources Vickie Seavers, Nancy Nielson

#### MTW022

Geographic Information Systems (GIS) for Educators John Kuglin, Chris Kuglin, Lauren Mackay



# WELCOME TO THE NECC 2000 PROGRAM!

NECA and the NECC 2000 Committee
extend a special thanks to our speakers.
Their willingness to take the time to
prepare sessions and workshops and share
their expertise means we can present
an excellent program that covers the
breadth and depth of the use of
technology in education.

#### MONDAY

Concurrent Sessions 1: 11 am-12 noon Concurrent Sessions 2: 12:30-1:30 pm Concurrent Sessions 3: 2-3 pm Concurrent Sessions 4: 3:30-4:30 pm

#### TUESDAY

Concurrent Sessions 5: 10:30–11:30 am Concurrent Sessions 6: 12 noon–1 pm Concurrent Sessions 7: 1:30–2:30 pm Concurrent Sessions 8: 3–4 pm Concurrent Sessions 9: 4:30–5:30 pm

#### WEDNESDAY

Concurrent Sessions 10: 10:30-11:30 am Concurrent Sessions 11: 12 noon-1 pm Concurrent Sessions 12: 1:30-2:30 pm Concurrent Sessions 13: 3-4 pm

#### SESSION TYPES/THEMES

All sessions take place at the Georgia World Congress Center (GWCC).

General Sessions are identified under the following themes and strands:

- Beyond the Crossroads, Where Do We Go from Here
- Distance Learning
- Connecting Technology to Teaching & Learning
- Instructional Strategies, Technology Integration, and Management of Technology in the Classroom
- · Project-Based Learning, Information, and Visual Literacy
- Facilitating Learning in Teams
- Assessing Student Learning and Connecting to Standards and Assessment
- Laptops
- · Preschool and Elementary
- · Language Arts and Social Studies
- · Math and Science
- Computer Science
- Other Subject Areas
- Special Needs and Assistive Technology
- · Internet/Web
- Multimedia
- · Support and Maintenance
- Funding, Planning, and Implementation
- · Evaluation
- · Research
- Staying Connected with Professional Development
  - · Staff Development
  - Preservice and Graduate Teacher Education
- Standards, Assessment, and Accountability: Staying Connected
- Moving beyond the Crossroads: Teachers as Agents of Change
- Connected Communities: Schools, Businesses, and Resources
- · Social, Ethical, and Policy Issues

GENERAL SESSIONS are one hour long and may be presented by an educational practitioner(s) or by a NECC 2000 Exhibitor. Exhibitor presentations are an integral part of our conference program and are solicited and juried through our standard proposal recruitment process. NECA member societies sponsor sessions from their areas of expertise with admission open to all conference attendees.

Note: Following each session description. Grade Level is listed followed by Audience. Note that "coordinators" includes administrators, library/media specialists, staff developers, and curriculum specialists.

**SPOTLIGHT SESSIONS** are one hour long and are led by leaders in the field of educational technology. They are featured during each of the 13 concurrent session blocks.

PAPERS are original peer-juried research papers on the general theme of using technologies to enhance education. Two papers are presented in each general session time slot.

POSTERS are informal sessions that allow participants to engage in one-on-one or small-group discussions. Visuals may be in the form of "hard" media such as poster board or bulletin board displays, or they may be electronic. Poster sessions are located in room 367W in the GWCC.

**INTERNET POSTERS** have the enhancement of Internet connectivity. They are located in room 367W in the GWCC.

STUDENT SHOWCASE features students and teachers demonstrating projects that use technology to promote learning and student achievement. Student Showcase presentations are located on Level 2 of the GWCC, opposite room 265W.



#### MONDAY, 8:30-9:45 AM

#### **KEYNOTE**

The Technology Puzzle: Understanding and Connecting the Pieces

John Kuglin, University of Montana-Missoula As classrooms transition into the new millennium, technology is a critical tool for schools. However, new developments are occurring at breakneck speeds. Educators find themselves staring into the box of a 5000-piece technology puzzle. In this presentation. Kuglin will demonstrate the availability of the puzzle pieces and demystify the process for connecting them in a manner that leaves participants feeling comfortable. Kuglin will highlight current and emerging Internet. video, computer, and satellite technologies with suggestions for implementing these tools in a cohesive manner.

#### MONDAY, 10 AW-12 NOON

#### STUDENT SHOWCASE

Located on Level 2, opposite Room 265W.

Use Technology to Raise Student Test Scores in Reading, Language Arts, and Math

Carolyn Huff (CA), with students Cynthia Kuhlman. Annie Neely, Darryl Felker

Students from the Atlanta Public Schools will demonstrate how their district has incorporated a comprehensive technology-based curriculum resulting in dramatically higher student test scores in reading, language arts, and math.

K-12; Teachers. Coordinators

#### How to Create an Effective, Student-Run Technology Help Desk

Matthew Byars. East Jessamine Middle School. Jessamine County Schools (KY), with students Kieryanne Sloan. Annanda Higginbotham. Kim Burge. Jessica King. Beau Murphy. Charies Young The cure for your technology woes is right under your nose: your students! Learn how to create an effective. student-run help desk in your school or district.

General. K-12, Community College, University/ College: Teachers. Coordinators, Postsecondary Educators

#### **POSTERS**

All posters take place in Room 367W.

The Technology Leadership Institute: It's More than a Purple Shirt

Jim Dilimann (KY). Doug Reed (KY). Carolyn Rude-Parkins (KY). Steve Brown (KY)

PS-M01-10, Table 3

Learn how Jefferson County Public Schools and the University of Louisville are collaborating to offer a master's program for experienced teachers focused on instructional technology leadership.

General: Teachers. Coordinators. Postsecondary Educators

#### National Pet Census:

A Collaborative Web-Based Project Paula Don (PA)

PS-M02-10, Table 1

Participating schools are counting pets!

Data. ideas, and information resulting from the data collection experience are shared.

Activities and links are included on the site.

Creating Preferred Futures-An Online Course in Futures Thinking

Seth Itzkan (MA), Sandy Burchsted (TX)

PS-M04-10, Table 12

The future is our only destination! Creating Preferred Futures links classes from around the globe in an interactive futures education curriculum. Explore scenarios. trends, and community involvement.

General, K-12; Teachers

Implementing the National Technology Goals 2000 into Classroom Instruction Darls Johnson (OH)

PS-M05-10, Table 7

Get an overview of constructivism and technology usage in classrooms. Explore how computers, assistive technologies, and the Internet facilitate instruction.

General. K-12. Community College, University/ College; Teachers. Teacher Educators, Postsecondary Educators. Coordinators

The Turtle School of Dance: Using MicroWorlds<sup>®</sup> to Meet State Mathematics Curriculum Standards Michael Lipinski (MA). Kathleen Bridgewater (MA)

PS-M06-10, Table 9

Our Turtle School of Dance project demonstrates how creative use of MicroWorlds can help teachers create exceptional elementary geometry lessons that meet state mathematics goals.

4-8; Teachers, Teacher Educators, Cnordinators

### Cross-Curricular Units Develop Student Learning

Craig Maniey (NE), Gien Eberspecher (NE). Neal Topp (NE)

PS-M07-10, Table 4

See cross-curricular comprehensive units developed by teachers and students to bridge core content areas and implement recent technology strategies.

6-12: Teachers, Teacher Educators, Postsecondary Educators

Jumping into the Millennium with Students and Technology

Janie McClam (TX). Margie Villanucva (TX). Patty Urias (TX). Maria Muñoz (TX)

PS-M08-10, Table 6

Three multilingual elementary teachers and the literacy leader demonstrate successful use of technology and the Web in the classroom and the work environment. They will also discuss their school district's successful grantwriting initiative.

General, K-3, 4-6; Teachers, Postsecondary Educators, Coordinators, Teacher Educators

Change Teaching and Learning with Technology and Constructivism Margaret Rice (AL). Elizabeth Wilson (AL). B. Joyce

Stallworth (AL). William Bagley (AL). Keith Rice (GA) PS-M09-10, Table 10

Discover how activities using technology and constructivism can help transform your classroom from a direct-instruction, teachercentered environment into a student-centered collaborative environment.

University/College. 6-12; Teachers. teacher educators

Promoting Spanish Language Learning Adventures with Computer-Based Technology

Chris Wings (MA), Victoria Munroe (MA). Carol Holzberg (MA)

PS-M10-10, Table 11

See the benefits of adding several technology-rich computer activities (including multimedia CD-ROMs, e-mail, and Internet research) to Swift River's Spanish language curriculum.

General, K-12, K-8; Teachers, Teacher Educators, Coordinators

Assessment in and Evaluation of Online Learning

Jane Zaliner (GA)

PS-M11-10, Table 2

A year of study was distilled into a Webbased course. Take an in-depth look at assessment and evaluation of students. faculty, courses, and programs delivered online.

Community College. University/College; Postsecondary Educators. Coordinators

Online Testing for the Classroom Joseph Zlsk (PA)

PS-M12-10, Table 8

Online testing provides unique opportunities for teachers to quickly and effectively assess student understanding of classwork and homework. Learn how to develop online tests.

General: Teachers, Teacher Educators. Postsecondary Educators



# CONCURRENT SESSIONS

#### MON., 10 AW-12 NOON, CONT.

#### **WEB POSTERS**

All posters take place in Room 367W.

The Math Forum: How and Why Should You Use It?

Sheldon Berman (PA), Jody Underwood (PA)

Sheldon Berman (PA), jody Underwood (PA

IPS-M13-10, Table 18

Learn about the Math Forum, the hottest site on the Web for mathematics education. Explore Ask Dr. Math, Problems of the Week, Teacher2Teacher, and more!

K-12. Community College, University/College; Teachers. Teacher Educators, Postsecondary Educators

#### The Louisiana Challenge: A Systemic Model to Enhance Student Achievement

Karla Bowlin (LA), Dolores Champagne (LA), Willa Freeman (LA), Pam Quebodeaux (LA), Carol Wells (LA)

#### IPS-M14-10, Table 17

Challenge facilitators share how to increase student achievement through telecommunications by addressing professional development, school readiness, parental involvement, school-to-work transition, and lifelong learning skills.

K-12: Teachers. Coordinators

NASA Online Resources: Exploring Our World and Beyond John Evans (VT)

IPS-M15-10, Table 15

NASA's Learning Technologies Project offers online resources in science and mathematics. Explore a world of NASA Web-based resources for educators.

K-12: Teachers, Teacher Educators, Coordinators

The Internet:
Bridging the Gaps among Schools,
Assessment, and Parents
Susan Graham (MA). Jennifer Degnan (MA)

IPS-M16-10, Table 23

The Internet provides parents and educators with a variety of assessment and personalization tools that aid in the selection of appropriate learning products and activities.

K-8: Teachers, Teacher Educators

Cumberland County Schools' Web Academy Reshapes Classrooms of the Future

Allan Jordan (NC), David Jackson (NC), Janet Kehoe (NC)

IPS-M17-10, Table 16

The Web Academy provides online instructional opportunities for students and staff. Look inside the academy to see how it benefits everyone.

General, 9-12; Teachers, Coordinators, Postsecondary Educators

Is Your Web Site Just Another Roadside Attraction?

Rick Monroe (AZ)

IPS-M18-10, Table 22

Ideally, the Web should promote the rehearsal and mastery of skills and thinking. Visit a site that does.

K-12; Teachers, Coordinators

Integrating Writing and the Internet Across the Curriculum

John Ost (NH)

IPS-M19-10, Table 19

Get strategies for online writing instruction and see demonstrations of the collaborative writing environment that is part of the author's Scribes Online series.

K-12; Teachers. Coordinators

Connecting Schools and Parents in a Meaningful Way:

A Minneapolis District Project

Sheldon Ramnarine (MN)

IPS-M20-10, Table 21

Studies prove that increased parental involvement leads to higher student achievement, reduced absenteelsm. and higher graduation rates. See how one large urban district is using the Web to get students, teachers, and parents involved and connected in a meaningful way to help students succeed.

General: Teachers

Jump-Start Integration with the Internet

Carol Siwinski (PA)

IPS-M21-10, Table 13

Combine productivity applications and the varied tools of the Internet for successful curriculum integration. Explore Web publishing, online telecollaboration, and integrated lesson plans.

General, K-12; Teachers, Coordinators

History beyond the Classroom Walls: Virtual Field Trips

Susan Smolin (NY), Michele Bower (NJ), Mary Ann Rota (NJ)

IPS-M22-10, Table 20

Construct Revolutionary War lessons around virtual field trips. Blend Web development, the Internet, and history—and leave the driving to usl

K-12; Teachers. Coordinators

The Good, the Biased, and the Ugly Jana Tobbe Hickey (KY). Laura Clifford (KY). Cathy Watson Pittman (KY)

IPS-M23-10, Table 24

Explore this interactive Web-based project that investigates issues related to why Web information should be accessed only by an "informed" mind.

K-12; Teachers, Teacher Educators, Coordinators

INTIME: Integrating New Technology into the Methods of Education Using Online Video Best Practices

Karia Krueger (IA). Doreen Hayek (IA). Sharon Smaidino (IA)

IPS-M24-10, Table 14

This catalyst grant will generate videos on the Web showing PK-12 teachers integrating technology and components of quality education. The videos can be used in training preservice teachers.

K-12. University/College: Teacher Educators

#### MONDAY, 11 AVI-12 NOON

#### **SPOTLIGHTS**

Education and Democracy: Technology for What?

Carl Glickman. University of Georgia (GA)

002 Room: Ballroom IV

Examine the purpose of American education and how rises in sophisticated technologies have coincided with decreases in ideals of democratic participation. However, technology can increase student achievement and participation.

K-12; Teachers, Teacher Educators, Coordinators

Reach the Reluctants:
Strategies to Win the Participation of Late Adopters

Jamie McKenzie, From Now On-The Educational Technology Journal (WA)

[003 Room: Ballroom II/III

In bringing new technologies into schools, we have paid too little attention to those who are reluctant. Discuss strategies for getting everybody up to speed.

K-12: Coordinators

Switching Gears: Preparing Students for the Digital Economy

Alan November. Educational Renaissance

Alan November, Educational Kenaissan Planners (MA)

M004

Room: Ballroom I

Technology is important, but it only represents the digital plumbing; the real learning revolution is in information and communications. Find out why we must replace teacher-student dependency with student self-directed and self-motivated learning.

General, K-12, Community College, University/ College: Teachers. Teacher Educators, Postsecondary Educators, Coordinators

The cassette icon ( indicates the session will be audiotaped. Please see page 9 for details.



# CONCURRENT SESSIONS

#### **PAPERS**

Two papers per one-hour session.

Information Technology in Teacher **Education: A Closer Look** 

Talbot Bielefeldt (OR)

M005 Room: 268W

ISTE reports on recent firsthand research into how teacher education institutions achieve integration of technology into their programs. In the research reported here, 416 U.S. schools, colleges, and departments of education were surveyed, with focus placed on integration of technology, facilities and Infrastructure, field experience opportunities, and the ability to use common software tools

Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### eEducation:

Interdisciplinary Crossroads Kathleen Micken (RI). Alan Cutting (RI)

Room: 268W

This paper presents a framework for activities as well as assistive and instructional technology for students with mild to moderate disabilities.

K-12: Teachers, Coordinators

### **BEYOND THE** CROSSROADS, WHERE DO WE **GO FROM HERE?**

Preparing Students and Teachers for Their Digital Worlds: Curriculum Evolution Gordon Dahiby (IA)

Room: 255W

Today's students and teachers are not only experiencing the early implications of growing up in an Information Age society. but also are going to live in it and shape it. Learn how curriculum and teaching and learning strategies are changing to help our learners excel. (Sponsored by ISTE's SIGTC)

K-12. University/College, Teachers. Postsecondary Educators

A Kid's of View Chicago: A Web Project of Child-Created Content

Karen Percak (IL). Sherry Weinberg (IL). Elena Savoy (IL). Orrin Murray

Room: 254W

Chicago Public School children welcome you to Chicago and NECC 2001 with this database-driven Web site. Explore how an entire learning community helped children create meaningful Web content.

General, K-12, University/College; Teacher: Postsecondary Educators, Coordinators

#### DISTANCE LEARNING

Videoconferencing Innovations and Issues: Museums and Their K-12 Colleagues

Timothy Barshinger (IN)

M009

Room: 158W

Learn how videoconferencing is used in informal learning environments to connect to K-12 students. Discuss research that examines the technology's use as an advanced organizer.

K-12; Teachers, Coordinators

🖭 Bridging the Digital Divide Vicki Kajioka (HI), Donna Shiroma (HI)

M010 Room: 368W

Learn how technology and telecommunications are used to meet the needs of diverse learners in remote locations. Hawaii's E-School has developed standardsbased courses for teachers and students. The presenters will share their successes and challenges in offering educational opportunities to students in rural settings. General, K-12; Teachers, Coordinators

#### CONNECTING **TECHNOLOGY TO TEACHING** AND LEARNING

#### Management of Technology in the Classroom

Managing Technology in Your Busy Day!

Jillian Copcland (MD). Patricia Dougherty (MD). Shira Leibowitz (MD)

M011 Room: 361W

Primary teachers, here's your chance to discuss your issues and concerns about successfully integrating technology into your busy classroom. Learn management tips and model lesson plans, and create a network of problem solvers for long-term solutions.

K-6; Teachers, Coordinators

#### Health and Environmental Education

EnviroNet and HealthNet: **Problem Based Learning Using** Collaborative Data Collection

Kathleen Dunn (MA). Randi Lite (MA)

Room: 364W M012

Engage your K-8 students in data collection. analysis, and interpretation by using student-generated health and environmental online data from HealthNet and EnviroNet.

K-8; Teachers, Teacher Educators, Coordinators

#### Fostering Critical Thinking, **Empowering Students**

ISTE K-12 Student Committee: **Empowering Students** in Education Reform

Marilyn Piper (WA). Al Rogers. Will Gage. Trong Pham. Emily McCartan. Ryan Powell

M013 Room: 360W

The ISTE K-12 Student Committee will host a panel discussion on how K-12 students are involved in ISTE projects and initiatives. This group will offer suggestions for meaningful ways to include students in education reform. The discussion will present compelling reasons for encouraging the development of K-12 student educational technology leaders. (Sponsored by ISTE)

K-12; Teachers, Coordinators

#### Logo's Second Millennium

Gary Stager (CA), Jeff Richardson (Australia). Steve Costa (Australia). Coleta Lewis (NY). Cynthia Solomon. Scott Perioff

Room: 157W M013a

Leading Logo-using educators will share their years of classroom experiences and insights on the role of computing in school reform. (A SIGLogo Society Session. sponsored by ISTE's SIGLogo)

General: Teachers, Teacher Educators,

#### Language Arts and Social Studies

Grammar for the E-Literate Lindy Sayers (TN), Lisa Springman (TN). Karen Douse (TN)

Room: 257W

Grammar is the linchpin of language arts teaching; technology can complement grammar instruction. Exchange the old. boring books for a dynamic and effective approach to grammar instruction.

4-8; Teachers, Coordinators

#### Math and Science

To "Excel" in the Classroom is Very Elementary Kathy Adkins (GA). Sandy Beck (GA). Linda Spudic (GA)

Room: 260W M015

Use Microsoft® Excel to spread excitement. collect information, and organize data to create templates and graphs to enhance classroom instruction. Cross-curricular examples will be shared.

K-8; Teachers. Teacher Educators. Coordinators

O Dirt Detectives: Collaborative Online Learning Project

Judith Green (IL), Rosiyn Glattman-Hirsch (IL) Room: 166W M016

Dirt Detectives allows chemistry students

anywhere in the country to interact with the Argonne National Laboratory in the analysis of soil specimens. Data collected nationally can be analyzed and compared.

6-12: Teachers, Teacher Educators, Coordinators



# ONCURRENT SESSIO

#### MON., 11 AW-12 NOON, CONT.

#### **Computer Science Teaching Programming** with WebToTeach

David Arnow (NY), Gall Miles (NC), Susan Dean (AL), George Crocker (AL). Anne DeFrance (MT). Gerald Welss (NY), Gordon Bassen (NY)

Room: 366W

CCSC members and others describe their experience using WebToTeach, an asynchronous learning network tool for introductory college and high school computer science. (CCSC Society Session)

Community College, University/College, 9-12; Teachers, Postsecondary Educators, Coordinators

#### **Special Needs and Assistive** Technology

Special Education Technology **Applications for Students** with Mild to Moderate Disabilities J. Eminett Gardner (OK), Cheryl Wissick (SC).

Dave Edyburn (WI). John Langone (GA)

Room: 156W

Learn about strategies and resources that promote curriculum integration. Web-based instruction, multimedia and simulation activities, and assistive and instructional technology for students with mild to moderate disabilities.

K-12; Teachers, Coordinators .

### Internet/Web

Children and Search Engines: What's the Big Deal?

Barbara Halistrom (GA). Anne Wallace (GA)

M019 Room: 160W

Welcome to our version of Consumer Reports, where third- and fifth-grade students evaluate "children's" Internet search engines. The results may surprise you.

K-8: Teachers, Coordinators

#### Support and Maintenance **SWAT Teams: Students Working** to Advance Technology

Chuck Drake (VA), Lucy Milier (NC)

Room: 261W M021 Learn how a SWAT team can advance your

school's technology program. SWAT teams can assist your school and the community with their technology needs.

4-12; Teachers. Coordinators

#### The Kids Are Running the School (Network, That Is)

Charlanne Pook (KY). Barbara Barr (KY). Ginger Williams (KY). Val Gallutia (KY)

Spend some time with presenters from the Jessamine County Schools and learn how students run the network and train teachers. Discover how they get their training, what their jobs involve, and future plans.

General. K-12; Teachers. Coordinators

#### Funding, Planning, and Implementation

Implementing a Fiber-Optic Network in Schools

Room: 362W

Debbie Haydock (MN). Jim Holland (GA)

M023

Explore the use of fiber cabling for K-12 local area networks. Discuss how fiber cabling can provide a solid infrastructure for the future.

K-12, Community College, University/College; Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

#### **Staff Development**

Getting to Wow! Moving Toward the Constructivist Classroom

Mary Burns (TX), Sharon Adams (TX)

M024 Room: 264W

We know those "wow" classrooms: Students are excited, active, and learning! See best practices and strategies for getting to "wow." presented by teachers and staff developers.

General; Teacher Educators, Coordinators

Teacher-Created Online Interactive Lessons: Tools and Training

Pamcia Laverty (FL)

Room: 267W M025

Discuss alternative methods of staff development and how these have enabled a greater number of teachers to be trained more effectively without disrupting normal school routines.

General, K-12; Teachers, Coordinators

#### Preservice and Graduate Teacher Education

Technology Innovations and Teacher Preparation through Partnerships and Grants

Curtis Ho (HI), Catherine Fulford (HI), Shulqulang Zhang (HI), Annette Sherry (HI)

Room: 269W

Through the leveraging of multiple grants and community partnerships, teacher education faculty have received training and support in redesigning their courses to address technology standards for preservice teachers.

K-12, University/College; Teachers, Teacher Educators, Postsecondary Educators,



Understanding and Supporting Effective Technology Integration Debra Rein (CA)

Room: 363W Explore the attributes of effective technology integration. Emphasis is placed on support strategies and the evaluation of effective practices. (Exhibitor presentation)

K-12: Coordinators

The School Odyssey: Using Digital Portfolios for Assessment and Accountability

David Niguidula (RI), Hilarie Davis (RI)

Room: 369W

Participate in live assessments of student and school digital portfolios. Learn how your school community can use Web technology to take control of assessment and accountability.

General, K-12; Teachers. Coordinators

#### MOVING BEYOND THE **CROSSROADS: TEACHERS AS AGENTS OF CHANGE**

SCR\*TEC Presents: Kids Are Key to Integrating and Supporting Technology

Douglas Adams (KS), Christy Blauer (KS)

M029 Room: 165W Explore tools, models, and organizations

that demonstrate how students and teachers can learn together. Students can be empowered as educational technology leaders and innovators.

General. K-12; Teachers. Teacher Educators. Postsecondary Educators, Coordinators



#### CONNECTED COMMUNITIES: SCHOOLS, BUSINESSES, AND RESOURCES

Connecting Families and Schools through Technology

Paula Jameson (OH), Russell Chaboudy (OH), Judy Elfrink (OH). Liz Milford (OH). Dick Dembosky (OH)

Room: 161W

Believing that the key to school success is family involvement, we have developed a technological system that actively involves working families in classroom activities.

K-12; Teachers, Coordinators



WWW.NECCSITE.ORG

# ONCURRENTSESSIONS

#### MONDAY, 12:30-1:30 PM

#### **SPOTLIGHTS**

Leading-Edge Computer-Using **Teachers Profiled** 

Hank Becker, University of California-Irvine: Ronald Anderson (MN); Sara Dexter (MN); Jason Ravitz (CA); Margaret Riel (CA); Amy Ronnkvist (MN): Yani Wong (CA); Kimberiy Burge (CA)

Room: Ballroom I

Technology-using teacher leaders. practitioners of authentic learning, reform program participants, and educators in high-tech school settings are profiled using national survey data.

General, University/College, 4-12; Teachers, Coordinators, Postsecondary Educators

Building a Connected Learning Community: Learning for Life Marcia Kuszmaul. Microsoft (WA);

Mary Stephenson (WA) Room: Ballroom IV M032

New devices, powerful software, and a global explosion in Web services are empowering lifelong learning anytime, anyplace.

General; Teachers, Teacher Educators, Coordinators

#### Scoring High with New **Technologies**

Jamie McKenzie. From Now On-The Educational Technology Journal (WA)

Room: Ballroom II/III

Discover how a technology program focused on literacy can dramatically improve the reading, writing, and reasoning powers

K-12: Teachers, Teacher Educators. Coordinators

### **BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

From Knowledge Reproduction to Knowledge Building

Alan Whitworth (KY)

M034 Room: 368W

Uncover a learning model employed in more than 100 Kentucky classrooms. In this model, students create their own understanding and build a collective knowledge base.

4-12: Teachers. Teacher Educators. Coordinators

Best Practices in the Use of Information and Communication Technology

Poter Wright (Canada)

Room: 255W

See key findings and recommendations from a series of 10 projects to determine best practices in the use of information and communication technology in K-12

General, K-12, University/College: Teachers. Coordinators, Teacher Educators

#### **DISTANCE LEARNING**

Quality in Distance Education Courses: A Case Study

Mary Wall (NJ), Joyce Grohman (NJ)

Room: 158W

Learn practical, replicable strategies to assist schools in planning for and enhancing the delivery of distance education, both online and ITV. Receive workable plans to maximize resources, increase student access, and maintain quality in online course delivery.

General. Community College, University/College: 9-12; Teachers, Coordinators, Postsecondary Educators

### CONNECTING TECHNOLOGY TO TEACHING AND LEARNING

Management of Technology in the Classroom

Next Steps for the One-, Two-, or Few-Computer Classroom Anne Meyn (TX)

M037

Maximize your resources. Learn tips and strategies to effectively integrate technology into the one-, two-, or few-computer classrooms with and without connectivity.

General. K-12: Teachers, Teacher Educators. Coordinators

#### Project-Based Learning

SMILE: Software Tools for Learning by Design and Project-Based Learning Janet Kolodner (GA), Kristine Nagel (GA)

Room: 364W

Experience a Supportive Multi-User Interactive Learning Environment (SMILE), developed to support collaboration. discussion, and reflection in project-based learning. Participants will use electronic whiteboarding, gallery walks, pinups, and storyboarding.

4-12; Teachers. Coordinators

#### Fostering Critical Thinking

Finding It on the Net: Being a Digital Detective David Warlick (NC)

M039

Room: 360W

Room: 361W

Conducting research on the Internet involves asking the right questions and interpreting the most useful clues. Learn to maximize your effectiveness in finding information on the Web.

K-12, Community College, University/College; Teachers, Coordinators

### **Preschool and Elementary**

Using Electronic Books to Promote Vocabulary Development

Norman Higgins (NY)

M040

Room: 257W

Electronic books are fast becoming exciting ways to promote elementary-level vocabulary development. Learn techniques for maximizing the power of these resources in the elementary classroom.

K-6; Teachers, Teacher Educators, Coordinators

#### Language Arts and Social Studies

o Kids, Museums, and Technology: New Media to Enhance Field Experiences Kerri Smith (OR), Ronda Fritz (OR), Molly Smith (OR), Shirley Baxter (OR)

M041 Room: 254W

This session will take a closer look at the Trails Project, an Internet-based, U.S. government-funded project designed to integrate technology into the classrooms. develop online resources, and foster partnerships among historical sites and classrooms along the Santa Fe and Oregon Trails.

General: Teachers, Coordinators

#### Math and Science

Expressing Culture and Science through Technology and Community Links

Mary Beth Kelley-Lowe (ND). Don Yellow Bird (ND). Pat Donahue (ND)

M042

Room: 166W

Explore technology collaboration between elders, educators, and implementers. Experience an Internet-based, culturally rich curriculum and student projects from conceptualization to implementation and revision.

General, 4-8: Teachers, Coordinators

**<u>Po</u>** Building the Future: Assembling Computers with Your Middle-School Students Paul Williams (VA). Sherry Ward (VA). William Dilamater (VA)

Room: 260W See how the Alexandria Country Day School has assembled an impressive collection of computers by teaching their middle schoolers to build them from scratch.

6-8, Coordinators



# CONCURRENTSESSIONS

#### MON., 12:30-1:30 PM, CONT.

Computer Science High-School Computer Science and IT Fluency

Philip East (IA)

M044 Room: 366W
An NRC Committee on Information
Technology Literacy report suggests a
"fluency" approach to "literacy." What might
high-school computing courses influenced
by the report look like?

Community College, University/College, 6-12; Teachers

#### Internet/Web

Effective Internet Content Management

Nate Casey (MN)

M045 Room: 362W

Find out how Internet content management software can be a valuable tool to enhance learning and can help you get the most from your existing Internet computer resources—even if you never use it to filter Web sites. (Exhibitor presentation)

General, K-12, Community College, University/ College; Teachers, Coordinators

Cyberways and Waterways™: Turning Texas' Rivers into a Virtual Laboratory for Learning

Steve Amos (TX). Betty Stapp (TX)

M046 Room: 160W

The Cyberways and Waterways program integrates technology and education by means of an environmentally based curriculum centered on streams. rivers. coastlines. and oceans.

6-12; Teachers. Coordinators

Cablevision and Bethpage, New York: Partnering to Build a Lifelong Community of Learners Jennifer Ostrager (NY), Tamara Black. Terence Clark

M047 Room: 157V Discover how a partnership between

Cablevision and the Bethpage. New York. community has created an environment for lifelong learning through its online education and professional development initiatives.

4-12; Teachers, Coordinators

# Funding, Planning, and Implementation

Ringmasters, Clowns, and Tightropes: Educational Technology Management and Leadership Annew Lamb (TX)

M048 Room: 156W

If you're supposed to be the ringmaster but feel more like a clown, this session will help you address 15 "biggie" educational-technology questions that teachers, parents, and school board members often ask. (Sponsored by the Association for Educational Communications and Technology [AECT])

General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Moving beyond Hidden Roadblocks to Successful Technology Programs

Caylen Tichenor (GA)

M049 Room: 256W

Take a humorous, enlightening, and thought-provoking look at the typical roadblocks that are unwittingly erected to prevent instigation of a successful technology program.

K-12: Coordinators



#### Preparing Digital Age Teachers: Connecting University Training and Staff Development

Curtis Bobbitt (MT), Ariene Borthwick (IL). Evelyn Woldman (MA). Gordon Dalilby (IA). Dale Niederhauser (UT), Willis Binnard

M050 Room: 268W

This panel will help participants compare and contrast successful practices of teacher training in schools of education with successful practices of staff development within school districts. (Co-sponsored by ISTE's SIGTE and SIGTC)

K-12. Community College, University/College; Teachers, Teacher Educators, Coordinators

#### Staff Development

Successfully Developing Believers: Teachers Able to Dream in ICT Mark Beach (BOP), Donna Broker (New Zealand)

M051 Room: 264W

Tahatal Coast School, one of New Zealand's leading ICT (information and communication technology) schools, offers a model of how ICT is made meaningful within the school environment.

General; Teachers, Coordinators

### Web-Delivered Staff Development: Factors for Success

Scott Noon (CA)

M052 Room: 363W

Online professional development provides exciting teacher growth opportunities, but how do you determine which programs are effective and worth the costs involved? (Exhibitor presentation)

General, K-12. University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

# Staff Development from the Classroom to the State: Working Models

Kathleen Webb (UT), Harvey Barnett (CA), Melanic Durfee (UT), Zach Tippetts (UT)

M053 Room: 267W

Discover staff development models for the class, school, district, and state levels. Locate free online manuals for 23 classes ranging from computer literacy to classroom integration.

K-12; Teachers, Coordinators

#### Preservice and Graduate Teacher Education

New Teacher Technology Preparation: Applications or Philosophy?

Patrick Levens (CA)
M054 Room: 269W

Should new teacher induction provide preparation that focuses on mastering microcomputer applications or provide a philosophical framework of reference relative to the use of technology as a curriculum tool?

K-12, University/College, Teachers, Teacher Educators, Coordinators

### STANDARDS, ASSESSMENT, AND ACCOUNTABILITY: STAYING CONNECTED

Gauging the Impact-Technology in Schools Cheryl Lemke (CA), Gil Valdez (IL)

M055 Room: 261W

What constitutes effective use of technology? Join this session if you want to jump into the fray of this difficult issue. Insights will be shared from a field project.

K-12; Teacher Educators. Coordinators

Web Portfolios:

Assessment for the 21st Century John Long (FL). Bert Miller (FL). Sue Comerford (FL)

M056 Room: 369W

Learn how to develop Web portfolios that will increase productivity and student achievement.

General; Teachers. Postsecondary Educators. Coordinators



# MOVING BEYOND THE CROSSROADS: TEACHERS AS AGENTS OF CHANGE

Power to the Teachers: The Technology Minigrant Approach

Pamela Livingston (PA), Louise Barteow (PA). Holly Perry (PA), Janet Malloy (PA). Christopher O'Nelli (PA), Katle Myles (PA)

M057 Room: 165W

Find out how a public and a private school empowered their teachers to create. through the use of minigrants, a dynamic technology curriculum.

K-12; Teachers, Coordinators

# CONNECTED COMMUNITIES: SCHOOLS, BUSINESSES, AND RESOURCES

Funding Your Dreams:
Grantwriting in the Information Age
Sheryl Abshire (LA), Glenn Johnson (NJ)

M058

Room: 161W

Need help obtaining funds to keep your school's technology program up-to-date? Explore grant development with a team of accomplished writers who will use your budget needs as examples in this active session.

General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### MONDAY, 1:30-3:30 PM

#### STUDENT SHOWCASE

Located on Level 2, opposite Room 265W.

Using Lab RATS to Create an After-School Technology Center

Debra Brown (TX), with students Reda Singletary. Te Lam. Valerle Porter. Linda Stevens, Janie Strader. Anjake Oza. Rafig Dianani. Brandy Fonteneaux. Yared Martinez. Eliza Martinez. Ted Nguyen Students are challenged, community members come to school, and the curriculum is transformed when you open an after-hours technology center. See how it's done!

General; Teachers, Coordinators

### CATS: Computers as Tools for Students

Sue Campbell (WY), with students Chris Brown. Beth Lougee, Rhonda Schmidt

CATS pairs students with and without learning disabilities as Homework Buddies. Students, parents, and teachers learn to use computer-based study strategies to increase achievement.

General, K-12, Community College, University/ College; Teachers, Coordinators

#### Let's Leaf through This

Cindy O'Sullivan (GA)

Integrated unit involving math, science, language arts, and technology using wireless laptop technology. This unit promotes cooperative learning, hands-on activities, research, application, and communication.

6-8: Teachers

#### SWAT Empowerment: Students Working to Advance Technology

Carmelita Santlago, Jean Childs Young Middle School

(GA), with students April Goolsby. Tanisha Bell,
Sade McLean. Christina Hardaway, Alisha Dockett,
Derrick Barker. Gary Cage. Elisha Early, Daniel AJo.
Nthando Thandiwe. Derrius Dowell.
Brandon Simmons. Alexander Hightower
SWAT creates a vehicle for students to learn
Web site design and construction using a
community publishing system and Netscape
Composer integrated with finding the
meaningful mathematics that is within their
world. Learn how the OJT and leadership
component begin to empower our total
learning community.

6-12; Teachers

#### **POSTERS**

All posters take place in Room 367W.

Discovery Channel School's Educator Workshop

Bob Anderman (MD)

PS-M25-1:30, Table 8

To complement its video products and Cable in the Classroom programming. Discovery Channel School offers educators access to free curricular resources online at DiscoverySchool.com. Learn to locate and adapt sample pages from the DCS library of lesson plans, teaching tips, and resource links.

K-12: Teachers. Coordinators

Develop Multimedia Tools to Support Functional and Community Training

Charles de Krafft (SC), Cheryl Wissick (SC), John Langone (GA), Windy Schweder (SC)

PS-M26-1:30, Table 7

Learn how educators and general education students worked with special education teachers to develop effective real-world activities for grocery shopping, positional concepts, cooking, sign recognition, and fast-food purchasing.

K-12: Teachers, Coordinators

Trails Projects Cyberneers: Integrating Technology with History

Joe Glotzbach (KS), Judeen Bachura (KS), Gordon Schmid (KS), Shella Litke (KS), Mae Thomas (KS)

PS-M27-1:30, Table 11

Breathe life into history! Take old-fashioned activity cards to a new level with multimedia lesson plans.

4-12; Teachers. Coordinators

Linking Learning to Life: The Community as a Primary Source Clndy Grabe (ND). Mark Grabe (ND). Jerry Feltls (ND)

PS-M28-1:30, Table 10

Authentic activity can be defined as functioning in the role of a practitioner. This presentation provides two examples in which technology involves students in the roles of biologist and historian as they gather and interpret information.

General, K-12; Teachers, Teacher Educators, Postsecondary Educators

Teaching Technology Together Julie Hamilton (NE)

PS-M29-1:30, Table 6

Understand how technology can be integrated across the curriculum rather than taught as a separate strand. Student projects collaborative lesson plans, and evaluations will be exhibited.

K-12, Community College, University/College: Teachers. Teacher Educators, Postsecondary Educators, Coordinators

Kentucky's Student Technology Leadership Program

Elaine Harrison (KY)

PS-M30-1:30, Table 3

Find out about STLP students' projects that have affected NETS and Kentucky Teacher Technology Standards. Projects include instructional, technical, and community themes.

K-12; Teachers, Coordinators

The School of the 21st Century Vicki Kajioka (HI). Donna Shiroma (HI)

PS-M31-1:30, Table 4

If technology is the cultural signature of our future, let's invite our youth to join in its creation! To this end, the Hawaii Department of Education launched "E-School."

General, K-12: Teachers, Coordinators

Effective Integration of Technology into a K-4 Elementary School Gallen Mitchell (NJ)

PS-M32-1:30, Table 12

How do you move teachers beyond basic technology skills to true integration? Discuss the best methods and strategies to solve all your dilemmas.

K-12; Teacher Educators, Coordinators



#### MONDAY, 1:30-3:30 PM, CONT.

TEAMS Distance Learning: Improve Instruction through Distributed Learning

Richard Nupoli (CA), Gayle Perry (CA)

PS-M33-1:30, Table 5

TEAMS Distance Learning involves classrooms across America in a unique model based on hands-on, meaning-centered student instruction and teacher professional development.

K-8; Teachers, Coordinators

Facilitating Online Learning: Supporting Learning in Virtual Communities

Raymond Rose (MA). Sarah Haavind (MA)

PS-M34-1:30, Table 1

Discover how to maximize the learning that takes place in online discussion groups by enhancing the skills of the group leader or moderator.

Community College, University/College; Teachers. Teacher Educators, Postsecondary Educators, Coordinators

Current and Emerging Trends in Faculty Training and Development Misty Smith (AL)

PS-M35-1:30, Table 2

Uncover the current models of faculty development that meet the challenges of teaching in the Information Age.

General. Community College, University/College; Coordinators

Inventors and Inventions That Changed the World Dianne Tuttle (CA). Linda Reynolds

PS-M36-1:30, Table 9

What makes DaVinci. Ford, and Fleming alike? How does mold turn into penicillin? Everything you want to know and more about inventors and inventions!

General; Teachers. Coordinators

#### **WEB POSTERS**

All posters take place in Room 367W.

**RUSDnet**:

Connecting Our Communities

Grace Boerner (CA)

IPS-M37-1:30, Table 23

This session highlights a districtwide Web site with special emphasis on instructional support, notably in "Especially for Teachers" curriculum resources. A number of state-of-the-art technologies are employed.

General, K-12, Community College; Teachers. Teacher Educators, Coordinators Technology and the Modern Language Classroom

Maryanne Boettjer (PA)

IPS-M38-1:30, Table 24

Technology in the foreign-language classroom enhances students' knowledge of the world through opportunities to practice language skills. See sample projects, rubrics, templates, and student work.

General, K-12: Teachers, Teacher Educators

middleschool.com: Designed with the Middle-Level Educator in Mind James Forde (CT). J. Howard Johnston (FL)

IPS-M39-1:30, Table 21

Join us for a discussion and demonstration of middleschool.com (produced by the Champion Middle School Partnership). It assists educators and administrators by providing content targeting their needs.

General, 6-8: Teachers, Teacher Educators, Coordinators

Weaving an Interdisciplinary Web: From Words on the Page to Multimedia on Stage

Susan Hunsinger-Hoff (PA), Graham Martin (PA), Phy Chauveau (PA)

IPS-M40-1:30, Table 14

Explore a dynamic, student-driven Web site rich in integrated technologies and interdisciplinary connections. This how-to session will inspire you to launch any class into cyberspace.

General; Teachers, Teacher Educators, Coordinators

Techs4schools: An Online Tech Support Community

Sophia Mansori (MA). Karen Sınith

IPS-M41-1:30, Table 15

Techs4schools, a free service from TECH CORPS, connects technology coordinators with IT professional through a web-based mentoring program providing schools with tech support, advice, and resources.

The Lexipedia Process: Creating Concept Maps with Web-Based Dictionary and Thesaurus Resources Robert Parks (NY), Jean Callahan (NY), Richard Kiely (NY)

IPS-M42-1:30, Table 19

Using the Wordsmyth Educational Dictionary-Thesaurus (www.wordsmyth.net), we demonstrate creation of computerized lexicons that open up conceptual and morphological pathways through dictionary, thesaurus, and media resources.

K-12, Community College. University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators Odyssey Online:

An Internet Resource for the Social Studies Classroom

Patricia Rodewald (GA). Nancy Clark (GA)

IPS-M43-1:30, Table 20

The Odyssey Online Web site features ancient Mediterranean and African objects as a focus for document-based learning in world history.

K-12; Teachers. Teacher Educators. Coordinators

Road Scholars Online: Fostering Critical Thinking on Real-World Issues Elizabeth Schwartz (MO)

IPS-M44-1:30, Table 17

Join Road Scholars Online with Jeeves as we explore different ecosystems and interview stakeholders in real-world debates about environment, economics, and demography.

4-12: Teachers. Teacher Educators. Coordinators

Bringing Teachers Online with Web-Enhanced Staff Development

Jana Sladkova (NY), Emily Hacker (NY)

IPS-M45-1:30, Table 16

How do you make Web resources accessible to overworked, computer-novice instructors? See models of successful Web-enhanced staff development combining online and inperson instruction.

General, Community College, Teachers, Teacher Educators, Coordinators

Achieve Technology Proficiency for Educators and Students Ron Stevens (CA). Marcia Sprang (CA) IPS-M46-1:30, Table 13

Discover how educators achieve proficiency in technology. Use the IMMEX assessment software to create snapshots of students' information use and problem-solving strategies.

General, K-12, Community College, University/ College, Teachers. Teacher Educators, Postsecondary Educators. Coordinators

Early Connections: Technology in Early Childhood Education

Judy Van Scoter (OR)

IPS-M47-1:30, Table 18

Learn what technology can—and can't—do for young children. Be introduced to new online, research-based information and resources.

K-3; Teachers, Coordinators

Quick Starts: Web Toolboxes to Support Technology Integration Cheryl Wissick (SC), Dave Edyburn (WI). Jim Gardner (OK)

IPS-M48-1:30, Table 22

Receive Quick Starts to Web sites for models of technology integration, virtual field trips, thematic units, and interactive educational games.

K-12; Teachers. Teacher Educators, Coordinators



S

500

#### MONDAY, 2-3 PM

#### **SPOTLIGHTS**

**QO** Teach to Learn: Positive Practices in Professional Development

Sara Armstrong, The George Lucas Educational Foundation (CA)

M059a Room: Ballroom II/III Dedicated to telling the stories of education. the George Lucas Educational Foundation shares current research and best practices from schools and programs across the country.

General: Teachers, Teacher Educators

Oo Staff Development: A Key to Technology's Effect on Learning Stephen Barkley, Performance Learning Systems (GA) M059 Room: Ballroom I

Technology can affect student learning in our schools as long as teachers are provided with effective teaching tools. Explore learning versus teaching. job-embedded staff development, and more.

General; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

[ Identifying Some of the Best IT Projects in the United States

David Moursund, ISTE (International Society for Technology in Education) (OR)

Room: 254W M060

The U.S. Department of Education periodically identifies promising and exemplary information technology (IT) in education projects. Methods, criteria, and results for the first year will be presented.

General; Teachers, Teacher Educators, Coordinators

Snapshot Surveying Teachers and Administrators around the Country

Cathle Norris. University of North Texas: Neal Topp (NE); Elliot Soloway (MI)

Room: Ballroom IV

Rather than guessing at the activities, beliefs and needs of teachers and administrators with respect to technology in education. we have been conducting snapshot surveys of educational professionals around the country. For example, we will report on a statewide survey of all teachers in Nebraska using our Web site (http:// snapshotsurvey.org). Armed with the responses from these surveys, we make suggestions for how schools address professional development, technology purchases, and curriculum integration. K-12: Coordinators

### **BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

New Horizon on the Desktop: Thin Client Solutions for Educators Karen Greenwood (CA)

M062

Room: 363W Find out how thin clients marry the lowcost, easy-to-use interface of PCs with the power and security of mainframe computers to create a flexible, scalable solution for schools. (Exhibitor presentation)

**DVD: The New Communication** Disease Everyone Wants to Catch!

General: Teachers. Coordinators

Gall Wortmann (IA)

M063 Room: 257W

Witness the contagious excitement that DVD generates in the classroom. See specific examples of DVD in content application (including barcodes, video blackboard, etc.). Share curricular integration possibilities.

General: Teachers, Teacher Educators, Postsecondary Educators

#### **DISTANCE LEARNING**

Free Tools for Organizing Online Learning Andrew Brovey (GA)

M064

These online tools may not be fancy, but they are free! See and experience no-cost options for Web-based discussions, resource sharing, and assessment.

Room: 368W

Community College, University/College, 6-12; Teachers, Coordinators, Teacher Educators, Postsecondary Educators

Online Teaching through Online Learning

Bruce Droste (MA)

Room: 362W M065 Virtual High School's online Teacher's

Learning Conference (TLC) prepares educators for successful teaching in an online environment through instruction in online pedagogy, assessment, and standards. (Exhibitor presentation)

9-12; Teachers. Coordinators

#### CONNECTING **TECHNOLOGY TO TEACHING** AND LEARNING

Instructional Strategies and Technology Integration

Integrating Technology with Classroom Curriculum, Library, and Fine Arts

Judy Clark (TX). Barbara Cardon (TX). Sandy Whitney (TX)

M066 Room: 361W

Learn how research-based instruction integrates computer technology with curriculum, library research, and fine arts to create an enriching learning experience for students.

General. K-8: Teachers. Coordinators

#### Multimedia

OO New Models for School Collaboration: Multimedia Projects in the Classroom

Marie Sayles (CA), Ron Dack (CA). Susan Mahony (CA)

Room: 364W

Talk about integration! Learn how one center piloted a collaboration with six schoois to support multimedia projects integrating arts and technology into classroom curriculum.

4-12: Teachers, Coordinators

#### Promoting Interdisciplinary Learning

**O.o.** The Great Chocolate Experience Gienda Bequette (IL)

M068 Room: 360W

Hear how your class, school, district. province, or state can be involved in this 'chocolaty-good" project that integrates technology into any grade level, across all disciplines, and correlates with the Illinois Learning Standards and National Educational Technology Standards.

K-12: Teachers. Teacher Educators. Coordinators

#### Preschool and Elementary

Oo K- 3 Technomaniacs Michelle Webb-Upham (AZ). Susan LaValley (AZ)

Room: 255W

Technology is a tool for enhancing your curriculum. Find out about the appropriate use of software and the Internet in the K-3 classroom.

K-3: Teachers. Teacher Educators. Coordinators

#### THANK YOU, VOLUNTEERS!

In addition to our Conference and Program Committees, nearly 1,200 additional volunteers help create a terrific and memorable NECC experience for participants



# CONCURRENT\_SESSIONS

#### MONDAY, 2-3 PM, CONT.

#### Math and Science

Get the Picture- Visualization Tools for Science and Math Bob Kolvoord (VA)

M070

Room: 166W

Visualization tools provide new avenues of exploration for science students. Discover software and curriculum for integrating computers in teaching and learning science skills and content.

General: Teachers, Teacher Educators. Postsecondary Educators, Coordinators

#### **Computer Science**

How to Improve Your Students' Results in AP Computer Science Charles Rice (NY), Maria Litvin, Debbie Carter, Joe Kmoch

M071

Room: 366W

A panel of experienced computer science teachers who are also AP exam readers will present fresh ideas on how you can improve the results of your students on their AP computer science tests. Learn what you and your students should focus on.

K-12: Teachers. Postsecondary Educators. Coordinators

#### Special Needs and Assistive Technology

Project GENASYS (Generating Assistive Technology Systemically)

Libby Cohen (ME), Dale Blanchard (ME).

Libby Cohen (ME), Dale Blanchard (ME), Deb Dimmick (ME), Nancy Lightbody (ME), Loraine Spenciner

M072

Room: 260W

By incorporating learner-centered principles to deliver support technology, specialized software, and Web accessibility, Project GENASYS stimulates powerful changes in how educators teach all students.

Community College, University/College; Teacher Educators

#### Internet/Web

for Your Imagination

Laura Hunter (UT), Kathleen Webb (UT)

M073

Room: 160W

Create a weather station. Create a curriculum-based Web site. Create a Web activity. Create an online class. Free online tools make it easy and fun!

K-12. Community College, University/College: Teachers. Teacher Educators, Postsecondary Educators, Coordinators

# Developing Teacher and Student Relationships Across the Distance: Global Connections

Laura Mates (IN). Susan Golder (PA). Donna Wilkin (IA). Nancy Alberti

M074

Room: 157W

Join us as teachers, students, and administrators from various locations in the United States and Italy share a collaborative project in teaching and learning with technology. (Sponsored by ACM SIGCUE)

K-12: Teachers, Coordinators

#### Support and Maintenance

Computer, Heal Thyself! Helping End Users Become Technology Responsible

Michael Houser (Germany). Marcia Applegate (Germany). Tom Posey (Germany)

M075

Room: 261W

Explore three topics that will help end users to work rationally and technology to operate flawlessiy: (1) Steps to Computer Independence. (2) Calamity Avoidance. and (3) Crash! Yikes! What Now?

General; Teachers. Coordinators

### Funding, Planning, and Implementation

eIntegration.com- Buying in to Technology Integration Marguerite Hart (IN). Ruth Huff (IN). Sandy Rogers (IN)

M076

Room: 256W

This session will focus on how one district created an environment for using technology as a tool for teaching and learning. Leave with a plan you can replicate.

K-12: Teachers. Teacher Educators. Coordinators

# Early Adopters of Technology in a University Setting Karen Dates (GA)

M077

Room: 158W

Review a recent research study of university faculty members who are considered to be early adopters of technology and consider the study's effect on technology workshop development.

Community College. University/College: Postsecondary Educators. Coordinators

# STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Developing a School Networking Course

Cathy Cavanaugh (FL). Terence Cavanaugh (FL)

M078

Room: 156W

When schools become networked, who keeps the network operating? Help educators satisfy their need for networking knowledge by offering a course in networking. Learn how we created ours.

General: Teachers, Postsecondary Educators. Coordinators

#### **Staff Development**

BUILT for the Bayou: Building Understanding & Instructional Leadership through Technology Felicia Coleman (LA). Sheryi Abshire (LA)

M079 Room: 264W

BUILT for the Bayou is a professional development catalyst for educational improvement in southwest Louisiana, targeting preservice educators, district-level technology mentors, and university professors.

General. K-12. University/College; Teachers, Teacher Educators. Coordinators

#### Preservice and Graduate Teacher Education

60 K- 16 Technology Integration for Improved Learning

Tim Best (OH), Jennifer Moormeier (OH). Bonnie Brownstein (NY), David Fletcher (NY)

M080

Room: 268W

Using technology frameworks and planning tools, preservice and practicing teachers design classroom experiences that emphasize technology and align curriculum, instruction, and assessment.

General, K-12, Community College, University/ College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

# Integrating Technology into Teacher Education: Project THREAD, A Progress Report

David Heflich (NV). Neai Strudier, Donald Anderson

M081

Room: 269W

A report on the progress of Project THREAD, a federally funded attempt to fully integrate technology into the preparation of preservice teachers at UNLV.

K-12. Community College. University/College: Teacher Educators, Postsecondary Educators. Coordinators

# STANDARDS, ASSESSMENT, AND ACCOUNTABILITY: STAYING CONNECTED

NETS for Teachers: Foundation Standards and Essential Conditions Lajeane Thomas (LA). Peggy Kelly (CA). Gary Bitter (AZ). Heidi Rogers (ID). Carol Hruskoey (WV)

M082 Room: 369W

Participants will have the opportunity to get more information about NETS for Teachers: Foundation Standards and Essential Conditions and understand how this latest release fits into broader NETS initiatives. (Sponsored by ISTE)

K-12, University/College; Teachers. Teacher Educators



#### MOVING BEYOND THE **CROSSROADS: TEACHERS AS** AGENTS OF CHANGE

Village Green: Facilitating Change in a Learning Community Lori Mullen (SC), Laura Stanton (SC)

Room: 165W

Examine the effect technology has had on the teachers and schools in Greenville, South Carolina. Find out how technology has been integrated across all grade levels and disciplines with a focus on the arts.

General: Teachers, Coordinators



#### CONNECTED COMMUNITIES: SCHOOLS, BUSINESSES, AND RESOURCES

Peace Partners: Creative Expressions in a City of Violence

Elizabeth Moore Rhodes (LA). Lori Kennedy-Roark

(LA), Loren Bianchard (LA)

M084 Room: 161W

Can creative expressions be used to transcend aggression among adolescents in the local culture? Look at a partnership for peace in New Orleans that uses technology as the primary medium for exploring this question.

K-12, University/College, Teachers. Teacher Educators, Coordinators

#### Social, Ethical, and Policy Issues

Digital Copyright from the Teacher's Desk

Caroline McCullen (NC). Mary Musacchia (NC)

M085 Room: 267W

Need help sorting through the maze of copyright Issues and how they apply to your students? Get up-to-date answers from a teacher and a lawyer who deal with copyright issues daily, and see real-world examples of properly documented projects.

General, K-12: Teachers. Teacher Educators.

#### MONDAY, 3:30-4:30 PM

#### **SPOTLIGHTS**

**5** The Supreme Court Is in Session: Ask the Experts

Larry Anderson, Mississippi State University; Al Rogers (CA); Chervi Lemke (CA); Bonnie Bracey (VA); Margaret Honey (NY); Andy Carvin (DC)

MORE Room: Ballroom I

Premier leaders of technology gather in one place so you can ask them your burning questions. Join us and discuss today's most critical issues!

General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### Preparing to Teach 21st Century Learners

Thomas Carroll, U.S. Department of Education (DC)

M087

Room: Ballroom IV Preparing technology-proficient educators to meet the needs of 21st Century learners is a critical issue for teacher preparation programs across the country. The panel will report on the progress of the Preparing

Tomorrow's Teachers to Use Technology (PT3) grants and next steps in this rapidly growing initiative.

Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators

#### • Thinking Visually with WebQuests

Bernie Dodge, San Diego State University (CA)

M088

Room: Ballroom II/III

WebQuests require learners to design, infer, create, and agree. Learn 10 ways to support thinking in a WebQuest with graphic organizers.

General; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### **BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

Student and Teacher Partnerships: Making It All Happen Dennis Harper (WA), James Smith (WA). John Hardy (WA)

MORG Room: 254W

Learn how students are taking a lead in their own education. The Generation www.Y model trains K-12 students to partner with teachers to integrate technology into the curriculum. Forty states and more than 1,000 schools are using it.

K-12. University/College; Teachers, Teacher Educators, Postsecondary Educaturs, Coordinators

All Roads Lead to Home:

An Integrated Technology Curriculum Margaret Hollies (IN), Donna Skeens (IN), Beth Lehner (IN), Barbara Danquist (IN), Julie Clark (IN). Marcy Miller (IN)

Room: 255W M090

Take a closer look at the All Roads Lead to Home Project and find out how this integrated technology project has touched the curriculum across all grade levels and united the entire educational community.

General, K-12; Teachers, Teacher Educators, Coordinators

Internet2: Network Revolution for the New Millennium

Ilang lan (AL)

Room: 158W M091

Find out how Internet2 intends to establish a multimedia academic broadband network operating at least 100 times faster than today's networks. More than 100 universities have joined forces with government and industry to employ Internet2.

General. K-12. Community College, Postsecondary Educators, Coordinators

#### DISTANCE LEARNING

Putting a Course Online: Teamwork, Creativity, and the Bottom Line Nancy Boling (MS). Shirley Smith (SC), Lucy Ferron (MS), Les Charlton (MS), Vicki Shirley (MS)

Room: 368W

This session will emphasize the process of creating a "real" online school complete with interactive classroom. library, conference room, and student lounge. Developed for the Advanced Placement Calculus course offered by SERC (Satellite Educational Resource Consortium). it is used by the instructor and students to communicate, collaborate, and motivate each other in the learning process.

General; Teachers, Curriculum Specialists



#### Instructional Strategies and Technology Integration

Technology:

Courage and Confidence

Paula Duncan (SC), Teresa Bromley (SC), Judy Parham (SC). Jolynn Allen (SC) Linda Babb (SC)

M093

Room: 361W

Learn how you can use a variety of technology tools to change your teaching methods at the high-school level and empower your students to become active learners and presenters.

9-12: Teachers, Coordinators



#### MONDAY, 3:30-4:30 PM, CONT.

Project-Based Learning Entrepreneurship Education: Living the Life of an Entrepreneur Mathew Georghiou (NS)

Room: 363W

Explore the barriers, challenges, and solutions to effectively delivering entrepreneurship education. Includes demonstration of GoVenture® Live the Life of an Entrepreneur software simulation program. (Exhibitor presentation)

General, Community College, University/College, 6-12; Teachers, Postsecondary Educators, Coordinators

From Cybraries to Electronic Postcards: K-12 Collaborative Environments on the Internet Bonnie Thurber (IL), Bob Davis

M095

Room: 364W

See easy-to-develop online communities used by K-12 teachers that include Web pages and dynamically generated virtual libraries, online surveys, electronic postcards, and book reviews.

K-12, teachers. Coordinators

#### **Assessing Student Learning** and Connecting to Standards and Assessment

O.O. Beyond Multiple Choice and Scores: The IMMEX Problem-Solving Assessment Approach

lovcelin Palacio-Cayetano (CA). Jimmy Ikeda (CA)

M096

Room: 156W

Explore how educators are engaging students in problem solving and selfassessment of strategies using IMMEX assessment software that generates real-time snapshots of students' problem solving.

K-12, Coinmunity College, University/College; Teachers, Postsecondary Educators, Coordinators

#### Language Arts and Social Studies

Cross-Cultural Understanding through Playful Online Class Konno Eriko (Japan). Ohtani Chie (Japan).

Kazuki Yoshitomi (Japan)

Room: 157W

The Nippon Educational Computing Association (Japan) presents their research into the impact of online learning in an eighth-grade classroom. including its promotion of cross-cultural understanding.

K-12. Teachers

Shouting Out the Window: Students Publish Online

Susanna Lang (IL)

Room: 257W

Publishing can build a young writer's selfesteem in a variety of ways. Explore a variety of publishing options made possible by the Internet with authorities who have written extensively about writing workshops and the value of publication.

K-12: Teachers, Teacher Educators, Coordinators

#### **Computer Science**

Addressing Prerequisite Deficits within the Curriculum to Improve Outcomes for Underprepared and Nontraditional Students Helene Bergman (NY)

M099

Room: 366W

How can we better prepare our college and university students for the rapidly evolving data communications industry? Find out how one computer science department revamped its curriculum to address this issue.

Community College, University/College; Postsecondary Educators, Coordinators

#### Special Needs and Assistive Technology

Where the Crossroads Meet: Software Solutions for the Total Classroom

Lynne Cater (GA). Pam Zipperer (GA)

M100

Room: 260W

Educators may feel apprehensive when faced with the task of adapting technology for children with special needs. See popular software that uses existing solutions to bridge this technology gap.

K-12: Teachers, Teacher Educators, Coordinators

#### Internet/Web

**Cultural Connections:** Similarities in Technology, Teleresearch, and Classroom Practices Dorothy Valcarcel Craig (TN), Alfonso Bustos Sanchez

(Mexico), Jaci Stewart (TN)

Room: 160W

This panel presentation reveals significant findings from three student inquiry and teleresearch projects conducted in the United States and Mexico. Project results. classroom implications, and replication suggestions are discussed.

K-12, University/College: Teachers, Teacher Educators, Postsecondary Educators. Coordinators

#### Funding, Planning, and Implementation

Common Experiences: **Establishing District Priorities** for Technology and Curriculum Integration

Marielle Palombo (MA), Rob Ramsdell

Room: 256W

Get introduced to a model for establishing district and school priorities for technology and curriculum integration. Learn practical tools, ideas, and strategies.

General: Teachers, Coordinators

#### **Evaluation**

Evaluation Mapping and Planning Tools for the Technology-Supported Classroom John Cradler (CA), Betsy Goeltz (ID). Ruthmary Cradler (CA)

M103

Room: 261W

This presentation provides educators with a new and tested process for planning and conducting credible evaluations of the effect of technology on student learning. The process not only provides evaluation information required by most state and federal funders but also gives teachers and administrators the information needed to help make ongoing improvements in the use of technology.

General: Teachers, Teacher Educators, Postsecondary Educators

#### Research

Using Video to Document Technology Infusion in Our Schools Marcle Bober (CA), Ellie Lynch (CA)

M104

Room: 360W

Videotape is an underused resource for data analysis. If used creatively and studied thoroughly, it allows researchers and evaluators to conceptualize technology infusion from new angles and perspectives.

K-12, University/College, Teachers, Postsecondary Educators, Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Strategies for Technology Leadership: Administrators as Models

Eileen Gallagher (IL), Yvette Chisoin (IL)

Room: 166W Helping administrators become active users of technology and model its appropriate use can help your school in integrate technology. Get ideas from Chicago (Illinois)Public Schools on how to implement a professional development program targeted to administrators at your school. General; Coordinators

#### **Staff Development**

OnLy U: Teaching Teachers to Use Technology Samantha Morra (NJ)

Room: 267W

Learn about an exciting and unique yearlong staff development program designed to empower teachers with the tools and skills necessary to successfully use technology.

K-12; Coordinators



#### Georgia's High School InTech: What Is It Like?

John Wiggins (GA). Mimi McGahee (GA). Diane Barron, Jeffrey White. Beaumie Kim, Kim Nichols

Room: 264W

If you wonder what all the excitement about Georgia's InTech is about, or if you're designing technology professional development for your school district or state, drop in!

University/College, 9-12; Teachers, Teacher Educators, Coordinators

#### Preservice and Graduate **Teacher Education**

**O** Build a Vision for Technology Integration Ann McCoy (AK)

Room: 269W M108

Using ISTE/NCATE Standards. faculty identified expectations for students' technology use and barriers to technology integration. Faculty development models were created and evaluated for effectiveness.

General, University/College; Teacher Educators, Postsecondary Educators

#### Video Streaming = Exemplary Teaching

Mimi McGahee (GA). Dwayne Trouilie (GA)

Room: 268W M109

For preservice and inservice teachers to gain insight into the impact of technology integration into the curriculum, Valdosta State University streams video of master teachers of technology integration.

K-12, University/College; Teachers. Teacher Educators



The Clearinghouse Presents: **Electronic Learning Resources** for the New Millennium Brian Bridges (CA)

Room: 369W Celebrate the best English/language arts. history/social science, mathematics, and science software evaluated by the

Clearinghouse during the last year. Clearinghouse staff will demonstrate these programs, distribute Director's Choice booklets, and explore the Clearinghouse

Online Web site. General: Teachers, Teacher Educators,

Coordinators

#### MOVING BEYOND THE **CROSSROADS: TEACHERS AS AGENTS OF CHANGE**

oo Internet Tools for Teachers! David Dockterman (MA)

M111

Room: 362W

This session will assist teachers in learning about the tools and services available that can connect their work life at school to the work they carry home. It will also demonstrate how the Internet can help teachers prepare for the classroom and reach outside the school. (Exhibitor presentation)

K-8; Teachers. Teacher Educators. Coordinators

Getting Published: Sharing Technology Successes with Others

Carol Simpson (TX), Shelley Giantz (OH), Kathy Schrock (MA), Ferdi Serim (NM), Renée Olson (NY)

Room: 165W

Editors and writers for school technology publications share tips and insights about writing and reviewing for publication. Learn what editors look for and how to submit your ideas.

K-12; Teachers. Coordinators



#### CONNECTED **COMMUNITIES:** SCHOOLS, BUSINESSES, AND RESOURCES

Linking Schools and Communities: The Local Access Connection

Jerry Abraham (MN)

M113 Room: 161W

See how a local school district in Minnesota has contracted with the city to manage and operate its community local access channel. Watch samples of various programs and find out how you can establish a similar agreement.

General; Coordinators

#### MONDAY, 5-6 PM



THRASHERS"-

OF-A-FEATHER SESSIONS

More topics and sessions may be available. See the NECC Info Booth and/or the daily newsletter for additional topics added since press time.

Technology in Teacher Education Room 165W Roger Carison

Sail the Net: Internet Safety Rules

Room: 366W Kob Heriong

**USA-** Germany Partnership-Laptop Computers for Teachers and Students

Room: 161W Mark Keith

**Online Professional Development** Room: 158W Gary Maestas

Using the Internet as an Educational Tool Room: 360W Mary McNabb

Connecting around the World with Compressed Video

Room: 361W Al Mizell

Digital Portfolios for Students, Teachers, and Schools

Room: 156W

David Niguidula, Heien Barrett, Hilarle Davis

Web-Based Resources: K-12

Room: 368W Gwendolyn Peart

**Project RAM** Room: 369W Barbara Rouse

**Eco-Connections** Room: 363W Matt Stacev

School Libary Media Specialists

Room: 166W

Theresa Stosek. Joyce Valenza

CHECK THE DAILY NEWSLETTER FOR

**ADDITIONAL THRASHERS TOPICS!** 



#### TUESDAY, 8:30-10 AM

#### **KEYNOTE**

Computers, Connections, and Community: Why We Care and Why It Matters

Craig Barrett, Intel Corporation (CA)

T001

Room: Hall G

As classrooms transition into the new millennium, technology is a critical tool for schools. However, new developments are occurring at breakneck speeds. Educators find themselves staring into the box of a 5000-piece technology puzzle. In this presentation. Kuglin will demonstrate the availability of the puzzle pieces and demystify the process for connecting them in a manner that leaves participants feeling comfortable. Kuglin will highlight current and emerging Internet, video, computer, and satellite technologies with suggestions for implementing these tools in a cohesive manner. (See page 4 for a biography of this speaker.)

with Special Presentation by U.S. Secretary of Education, Richard W. Riley.

#### TUESDAY, 10 AM-12 NOON

#### **STUDENT SHOWCASE**

Located on Level 2, opposite room 265W.

## Weaving Technology through Your Curriculum

Lori Brandman, Shallowford Falls Elementary-Cobb County Schools (GA), with students Amanda Ku. Kristin Hooper, Audrey Hall. Sean Hellman. Austin Freese. David Tatum

Fifth-grade students show how to use bookmarked sites on the Internet and programs such as Microsoft Word. PowerPoint. Microsoft Publisher. and Inspiration to enhance their learning in all curriculum areas.

K-8: Teachers

## Technology Fair: Students Preparing, Producing, and Presenting

Sherah Carr. Alton C. Crews Middle School (GA). with students Laura Bishop. Laura Wood
See projects that middle-school students presented at their school's instructional technology fair. Learn how the fair was organized. advertised, and supported by the community.

K-12: Teachers. Coordinators

#### Potter Mania

Karen Conner. Huntsville City Schools-Chapman Elementary (AL), with students Jared Brown. Chris Lovoy, Katle Morring, Trevor Jones. Evan Wells. Amber Wilbourn

"Potter Mania" is a thematic unit based on the Harry Potter books by J. K. Rowling integrating the use of technology. The students produced a multimedia presentation as a culminating activity. It is an Alabama Council for Technology Education award-winning presentation.

General, K-12

# Technology Across the Curriculum Mark Rice. West Jasper School/William Carey College (MS)

See 10 years of state, national, and international award-winning projects (Grades 2-12) designed around HyperStudio®, simulations, and real-world across-the-curriculum student projects. See and learn how technology has reformed a rural school.

K-12, University/College: Teachers. Postsecondary Educators. Coordinators

#### **POSTERS**

All posters take place in Room 367W.

Never Too Young to Be Stars Marsha Boring (CA)

PS-T49-10, Table 11

Kindergartners love to be movie stars! Think they're too young for technology? See what five year olds can do!

K-6; Teachers, Coordinators

# Surfing in to the 21st Century: The Technology-Rich Inclusive Classroom Karl Bowen (IL). Heather Cook (IL). Klm Crum (IL). Karon Gephart (IL)

#### PS-T50-10, Table 5

See how the latest software and hardware has been used with successful inclusive classrooms. Take home examples of collaboration projects, rubrics, Internet use, and much more.

General, 4-8; Teachers, Coordinators

#### Celebrating Diversity in Turkey: The Land Where East Meets West

Joy Brenneman (MA), Erin Williams (MA). Carol Holzberg (MA)

#### PS-T51-10, Table 6

Learn about a schoolwide project integrating several computer-based activities (e.g., Internet research, e-mail, and electronic presentations) into the study of Turkish people and culture.

General, K-12; Teachers, Teacher Educators, Coordinators

# Bridging the Gap between Communities and Schools through Technology Sandy Elnsel (AL)

PS-T52-10, Table 9

The Internet offers exciting possibilities for informing communities about what students are learning. Learn how to link community and schools through technology.

General. 4-12: Teachers. Teacher Educators. Coordinators, Postsecondary Educators

#### TEACH-IT: Technology for Teachers, By Teachers

John Fulwiler (LA), Rosalind Haic (LA), Charles Duffy (CA), Debra Bordelon, Charles Sevick

#### PS-T53-10, Table 2

A historically Black university engages preservice and noncertified teachers in a continuum of instruction, training, workshops, and service learning in the community through various technological delivery systems.

K-12, University/College; Teachers, Teacher Educators, Coordinators

#### An Education in Online Learning

Nancy Haas (CA), Sylvia Martinez (CA). Dan LaFountain (MD), Gary Stager (CA)

PS-T54-10, Table 1

Can online learning be more than just delivering lectures on the Internet? See how an online educational program can create learning communities through existing, affordable technology.

K-12, Community College. University/College: Teachers, Teacher Educators, Coordinators

# SMILE: Student Mentors in Learning Experiences

Denise Harreii (1N)

PS-T55-10, Table 4
SMILE is a mentoring club in which elementary students become technology experts and use their newfound talents to assist teachers and peers. Receive information about starting a SMILE group in your school.

General. K-12; Teachers, Coordinators

# Water: Running through the Curriculum

Sheila Kelly (MA)

PS-T56-10. Table 10

Water as a theme for science, ecology, and history, pervades our curriculum. Enhance students understanding of the water cycle through satellite imaging and other technology.

General, 4-8; Teachers, Coordinators

#### Student Work in a Problem-Based Learning Unit

Cindy Kovalik (OH) PS-T57-10, Table 3

Problem-based learning invites alternative assessment strategies. This poster session showcases seventh-grade student work from a technology integration initiative using problem-based learning as an instructional strategy.

General. K-12, University/College; Teachers, Teacher Educators, Coordinators

WWW.NECCSITE.ORG

ERIC

# CONCURRENT\_SESSIONS

## The Educational Technologist as Curriculum Specialist

Kevin McGillivray (Germany), Elizabeth Walker (Germany), Gene Knudsen (Germany), Oren Edie (Germany), Tara Beau (Germany), Bonnie Hopkinson. Tom Perceault, Sonja Border

#### PS-T58-10, Table 8

How can we best assist teachers to make the most effective connection between software tools and curriculum? Hessen Educational Technologists will share their model.

General, K-12: Teachers, Teacher Educators, Coordinators

## Virtual Learning Interface for K-12 Education

Arthur Recesso (GA)

PS-T59-10, Table 7

Interact with virtual characters as they demonstrate their ability to teach students and support classroom learning. Characters speak and have students solve problems.

K-12: Teachers, Teacher Educators. Coordinators

# Videoconferenced Family Powwows with Native American Keypals: Online Culture Sharing

Agnes Zaorski (NJ)

PS-T60-10, Table 12

Videoconferenced family powwows with our Native American key pals will facilitate a 21st century style of the Native American "storyteller" oral tradition.

General, K-8; Teachers, Teacher Educators, Coordinators

#### **WEB POSTERS**

All posters take place in Room 367W.

Science, the Web, and a New Regionalism Joseph Biessing (GA), Ann McCartney (GA)

IPS-T61-10, Table 15

Learn how to develop a Web site that integrates science and technology into the curriculum, uses the school district's network, and creates a community of learners.

K-12; Teachers, Coordinators

Step Up to 2000: Internet Reading Corner for Children

Joyce Cartwright (TX)

IPS-T62-10, Table 19

Visit the online reading corner for a variety of elementary-level children's stories. Read or listen to fairy tales, fables, poems, folktales, and nursery rhymes.

K-6; Teachers, Coordinators

## Lessons and Links for Multicultural Resources

Ronald Helms (OH), Colleen Finegan (OH), Bonnie Mathies (OH)

IPS-T63-10, Table 21

Explore a cross-section of Internet multicultural resources that have been critically parceled out for their effectiveness in promoting diversity education in the classroom.

K-12, Community College. University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

# Using Ecotonization to Teach Environmental Education: Bridging the Gap

Kris Kieckner (MN)

IPS-T64-10, Table 17

Looking for something to grab your students' attention and keep them motivated to learn? Explore the potential of Ecolonization and Shockwave™.

General: Teachers, Postsecondary Edurators, Coordinators

#### Using Student Web Presentations in Large-Enrollment College Courses Matthew Laposata (GA)

IPS-T65-10, Table 22

Student Web presentations are a great way to integrate technology into college courses. But how do you use them in large classes? Find out here.

Community College, University/College; Teachers, Postsecondary Educators. Coordinators

## Learning amid a Sea of Information in the New Millennium

James Levin (IL), Dan Kauweii (IL), Young-Jin Lee (IL), Daniei Schiff (IL)

IPS-T66-10, Table 24

The Internet has become a tremendous repository of information and holds much promise—but only if learners are provided the tools to make sense of it.

General; Teachers, Coordinators

# Teaching Online: Trials and Tribulations, Sinkholes and Successes Nancy McClure (WV)

IPS-T67-10, Table 16

This session details the steps taken to develop and teach online courses as well as to assess and compare resulting effectiveness of teaching and learning.

General, Community College, University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

## Promoting Professional Development Online

Sharyl Nye (AL), Ann Henry (AL)

IPS-T68-10, Table 23

See a demonstration of online registration for professional development technology courses.

General: Coordinators

## Get Tangled Up in the Web... Together!

Mary Robertson (KY). Jana Hickey (KY)

IPS-T69-10, Table 14

Learn about a new approach that gets staff members fired up about using WebQuests and online projects with their students! K-12; Teachers. Coordinators

## Please Steal This Idea: The K12 Internet Explorers Club

Therese Turman (GA). Craig Liggett (GA). Joan Brown (GA), Jeff Hansen. Ellen Freedman

IPS-T70-10, Table 13

The K12 Internet Explorers Club is a teacher-driven project designed to empower educators in classroom technology use and to mentor others in this process.

General, K-12, Community College, University/ College, Teachers, Teacher Educators, Postsecondary Educators, Coordinators

# Starship School: Creating Productive, Safe, Family-Oriented Educational Communities

Hazel Wagner (IL)

#### IPS-T71-10, Table 18

Technology is revolutionizing learning worlds. Learn how technology affects the thinking tools of disciplines (e.g., the scientific process) and supports integrated and independent self-directed learning.

K-8: Teachers, Teacher Educators, Coordinators

## A Virtual Trip through the Civil Rights Movement

Elizabeth (Liza) Wilson (AL), Margaret Rice (AL), Beveriy Ray (AL), B. Joyce Staliworth (AL), Kathy Shaver (AL), Kim Callison (AL)

IPS-T72-10, Table 20

Take a virtual trip through the Civil Rights movement while learning how to use technology for interdisciplinary teaching. University/College. 6-12: Teachers. Teacher Educators. Coordinators



#### TUESDAY, 10:30-11:30 AM

#### **SPOTLIGHTS**

QQ Igniting and Inviting Student (and Teacher) High Performance with Technology

Bobb Darnell. District 124, Arilington Heights (IL)

T002

Room: Ballroom IV

Discover how to help students become responsible, motivated, technologically literate learners. Learn how to explicitly teach students five powerful strategies that will develop their learning-to-learn skills and accelerate learning.

K-12; Teachers, Teacher Educators. Coordinators

Dancing on Quicksand: New Mindsets for the Information Age

lan Jukes, Thornburg Center for Professional Development (Canada): Ted McCain (Canada)

Room: Ballroom I

It's a brand new wild and wired world. However, educators and administrators have been ill prepared by an outmoded system. Learn what it will take to be successful in a brave new world where mindset will rival machines.

General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Community, Communication, and Collaboration: Project-Based Learning on the Internet

Al Rogers, Lightspan Partnership, Inc. (CA)

Room: Ballroom II/III

This multimedia presentation takes you beyond the common vision of the Internet as "library" or "delivery system" by showing examples of effective Internet use in schools.

General: Teachers. Teacher Educators. Coordinators

## **BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

Providing Web Support for Online and On-Campus Instruction Daxing Chen (TX)

T005

Room: 158W

Web-based instruction is becoming an important teaching tool. Learn how to develop a systematic and progressive approach to support a wide range of Webbased learning activities.

General: Teachers, Coordinators

#### Georgia Learning Connections: We've Got Stuff!

Lisa Ciardulli (GA). Lynne Purcell (GA). Sheila Barnes (GA)

T006

**Room: 255W** 

Visit a unique, online resource built by educators for educators. State standards are directly connected to Web links, lesson plans, and assessments to best facilitate learning.

K-12; Teachers, Teacher Educators, Coordinators



#### CONNECTING **TECHNOLOGY TO TEACHING** AND LEARNING

#### Instructional Strategies and **Technology Integration**

Tempting Techsational Tips

Tony Newland (IN), Phyllis Wilson (IN), Mary Jo Kinniman (IN)

T007

Room: 361W

Want to build student success? Been searching for practical strategies and effective ideas on integrating technology use across curriculum? Then this session is for you!

K-6: Teachers, Teacher Educators, Coordinators

#### **Photography**

Out of the Darkroom and into the Classroom with Computers

Lestle McGoey (LA), Denise Barnes (LA), Sandy Scott (LA)

T008

Room: 364W

Learn how to develop a high-school photography course using traditional 35mm cameras, digital photography, and darkroom techniques using the computer instead of a traditional darkroom

General, 9-12; Teachers, Coordinators

#### Fostering Critical Thinking

Blooming" Critical Thinkers for Tomorrow

Anne Davis (GA)

T009

Room: 360W Unleash potential for lifelong learning by integrating current events, critical thinking, and technology. See Bloom's Taxonomy, Internet resources, and braincompatible activities.

4-8; Teachers, Teacher Educators, Coordinators

#### **Assessing Student Learning** and Connecting to Standards and Assessment

OD Designing and Developing Standards-Based Electronic Portfolios Helen Barrett (AK)

T010

Room: 260W

Take advantage of technology to bring new life into student portfolios. Learn how to design and develop a standards-based electronic portfolio using a variety of technology tools, including relational databases, hypermedia/presentation software, and Web-accessible hypermedia files.

General, K-12, Community College, University/ College; Teachers. Teacher Educators. Postsecondary Educators

#### Laptops

Laptops Level the Score for Urban Learners

Linda Gutterman (NY). Brian Morrow (NY). Gladys DelliPizzi (NY), Christine Mulgrave (NY), Steve Jaffe (NY), Brenda Mercado (NY)

Room: 261W

In a world where competition for jobs will be flerce, Community School District Six finds that laptops level the playing field for inner-city students.

4-12: Teachers, Coordinators

#### Preschool and Elementary

Connecting Fun and **Educational Technology Activities** with the K-5 Curriculum Diane ludd (FL), Inez Heath,

T012

Room: 363W

See demonstrations, examples, and discussion of ways to enhance learning by integrating technology into the K-5 curriculum using a constructivist approach. University/College, K-6, teachers, Teacher Educators, Coordinators

#### Language Arts

An Odyssey through Technology in the English Class

Linda Babb (SC). Jo Lynn Ailen (SC), Teresa Bromley. Paula Duncan. Judith Parham

T013

Room: 257W An English teacher uses teamwork to help freshmen read. analyze, and synthesize Homer's Odyssey through a multimedia computer project. (Win the war waged by state standards without using a Trojan horse.)

9-12; Teachers

#### Math and Science

Students Blast Off: A Collaborative Learning Mission Ann McGlone (WA)

T014

Room: 166W

Learn about an exciting educational experience that enables students across the country to explore space survival and to collaboratively experience all aspects of building a space community.

General. K-12, K-8; Teachers. Teacher Educators. Coordinators

#### Special Needs and Assistive Technology

**Technology Solutions That Work** in the Academic Areas

Scott Marsiius (WI), Diane Rozanski (WI)

Room: 156W

During this session, you'll take a closer look at software programs that have been successful in assisting students who are struggling with reading, writing and arithmetic.

General; Teachers, Teacher Educators. Postsecondary Educators



#### **Computer Science** Star Trek and Beyond:

**Ethics and Social Impact** 

C. Dianne Martin (VA)

T015

Room: 366W Science fiction is more than just popular entertainment; it can also be a tool to illustrate ethical issues in a technologydriven society. Class exercises, case studies. and resources will be shared. (Sponsored by SIGCAS)

K-12, Community College. University/College:

#### Internet/Web

WebCT: From Implementation to Success

Carolyn Gard (GA)

T016

Room: 160W Support is a critical component of a successful Web-based instructional technology program. Learn about Georgia

State University's support network for its WebCT courses.

Community College, University/College, 9-12; Postsecondary Educators. Coordinators

#### Multimedia

**60** Turn Teens and Teachers on to Technology with HyperStudio<sup>4</sup> Lisa Boyd (AL)

T017

Room: 369W

Discover exciting, easy ways to incorporate HyperStudio into your lesson plans across the curriculum. See examples of technology incorporation in history projects.

4-12; Teachers, Coordinators

#### Funding, Planning, and **Implementation**

O Schools Interoperability Framework

Patrick Plant (MN), Barbara Andrepont. Javier Perez-Sanchez. Sue Kamp (DC)

T018

Room: 157W

Learn about the "Schools Interoperability Framework" and current pilot schools. This new initiative uses XML (Extensible Markup Language) to solve a daunting education problem-how to share and report data across all K-12 administrative and curriculum applications.

K-12, General; Coordinators, teachers

#### Tips for New Computer Coordinators

Richard Smith (TX). Anthony Sassi (TX)

Room: 256W In this session, two highly experienced instructional technology directors will share what they have learned about implementing technology into the classroom and working within and around the system to achieve that goal.

K-12: Coordinators

#### Research

Brain-Based Research and Technologies: A Natural Fit?

David Williams (IN), Margot Williams (IN)

Room: 254W

See how it fits! Explore the latest brain-based research and how instructional technologies can complement methods and strategies for learning.

General, K-12, Community College, University/ College: Teachers, Teacher Educators, Postsecondary Educators

#### Staff Development

The ITLP Program

Steve Baule (IL), Karen Arenson (IL)

Room: 267W T021

Learn about the Individual Technology Learning Plan (ITLP) program, which pairs teachers with mentors to help them develop new technology skills and integrating them into their classrooms.

General; Teachers, Teacher Educators. Coordinators

🚾 4001: A Cyberspace Odyssey

Linda Dickeson (NE) T022

Room: 264W Learn how a large school district created more than 4,000 independent Internet users. Topics include innovative training, a comprehensive Web site, online staff development, and customized software CDs.

General; Teachers, Coordinators

#### Preservice and Graduate **Teacher Education**

Collaborative Teacher Education: An **Online Case Study Shared Across** Universities with Preservice Teachers

Cheryi Mason (VA), Kara Dawson (FL)

Room: 268W T023

Find out how the presenters developed a cohort of social studies educators through online professional discourse with colleagues in geographically disparate locations.

General: Teachers. Teacher Educators. Coordinators

#### **Preparing the Professors:** Issues in Educational-Technology **Doctoral Programs**

Diane McGrath (KS), Trudy Abramson (FL). Arlene Borthwick (IL), Marianne Handler (IL). Ann Thompson (IA). Leigh Zeitz (IA)

Room: 269W T024

Educational-technology graduate faculty will lead a conversation focused on the challenges and future visions related to the design of educational-technology doctoral programs. (Sponsored by ISTE's SIGTE)

General, University/College: Teachers. Teacher Educators, Postsecondary Educators

#### Creating a Culture That Supports Online Instruction

Catherine Thurston (IL), Gregory Waddoups (UT)

Room: 368W T025

Learn about organizational structures. equipment, incentives, professional development opportunities, and technical support that optimize efforts in online course development.

General, Teacher Educators, Postsecondary

#### MOVING BEYOND THE CROSSROADS: TEACHERS AS **AGENTS OF CHANGE**

Cultivating Powerful Visions of Classroom Integration

Peggy Ertmer (IN), Sangeetha Gopalakrishnan (IN). Eva Ross (IN)

T026 Room: 165W

Find out how one elementary-, one middle-, and one high-school teacher integrated classroom technology. Their stories are conveyed on a CD-ROM that allows one to easily compare their findings.

K-12, Community College, University/College: Teachers, Coordinators



#### CONNECTED **COMMUNITIES:** SCHOOLS, BUSINESSES, AND RESOURCES

Innovative, Green, and Free! **ETCEP: The Alternative** to Technology Funding Lauren Bonica (NJ), David Steffens (NJ)

Room: 362W T027 Start coilecting empty laser and inkjet cartridges today! Discover how thousands of schools are earning free computer technology through Educational Technology & Conservation Exchange Program (ETCEP). (Exhibitor presentation) K-12: Teachers, Coordinators

O Picture This Century: An Interactive, Interdisciplinary Learning Experience

Sue Kidera (NY), John Schless (NY). Carole Schwab (NY), Barbara Manchee (NY)

Room: 161W T028

Learn about Picture This Century, an exciting and fun interdisciplinary project in which students create an interactive Web site through cooperative learning, community partnerships, and professional development.

General, Community College, University/College, 4-8; Teachers, Teacher Educators, Coordinators



#### TUESDAY, 12 NOON-1 PM

#### **SPOTLIGHTS**

Integrating Technology into Teacher Education - One Syllabus at a Time

Donna Baumbach. University of Central Florida; Gail West (FL); Mary Bird (FL)

T029 Room: Ballroom II/III Presenting the design and results of the SEIR\*TEC/SUNRAY Higher Education Institutes that focused on integrating technology into teacher education programs through modeling and online and hands-on activities.

University/College: Coordinators, Teacher Educators

Using Immersive Virtual Worlds in Real-World Classrooms

Chris Dede, George Mason University (VA): Debra Sprague (VA): Theresa Siggins (VA): Elisa Kelley (VA); R. Bowen Loftin (TX)

T030 Room: Ballroom IV
When high-end virtual reality systems are
placed in elementary and secondary
classrooms, students learn science more
effectively. We'll discuss educational
outcomes and their implications for
the future.

General; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Technology Training for 5,000 Teachers: The Intel® ACE and Power to Teach Programs

and Power to leach Programs
Robert Nolan. Institute of Computer Technology (CA):
Kathy O'Neill: Kim Mulkey: Dan McBride:
Dave Murdock: Paige Kuni: Jennifer Doherty

T031 Room: Ballroom I
Learn what it takes to educate classroom
teachers to integrate technology into their
existing curriculum to help students
increase their learning and achievement.
In these two programs, foundations,
high-tech corporations, and universities
have partnered to offer hands-on technology
training in 11 states and the District

of Columbia. K-12; Teachers, Teacher Educators, Coordinators

BEYOND THE CROSSROADS, WHERE DO WE GO FROM HERE?

Making a Difference:
New Tools for a Timeless Purpose
Lynell Burmark (CA), Lou Fournier (CA)

T032 Room: 255W
The future of education is rushing headlong back to the heart. Learn how to reach the toughest kids through technology and a visionary approach.

General, K-12; Teachers, Teacher Educators, Postsecondary Educators

Expand Learning Possibilities: Internet Computing by the LearningStation.com

Craig Larsen (NC). Buri Hogins (NC). Dale Mann
T033 Room: 362W

Through software rental and thin-client computing, the LearningStation.com provides unique solutions to the difficulties of acquiring and maintaining the latest in computers and software.

(Exhibitor presentation)

K-12: Teachers, Postsecondary Educators, Coordinators

#### **DISTANCE LEARNING**

Electronic Delivery of High-School Courses: Status, Trends, and Issues William Thomas (GA)

T034 Room: 368W Are Web-based courses for high-school

Are Web-based courses for high-school students the long-sought "silver builet" that will meet student academic needs? This presentation addresses some of the important policy, instructional, and management issues.

K-12, Community College, University/College; Teachers, Postsecondary Educators. Coordinators

# CONNECTING TECHNOLOGY TO TEACHING AND LEARNING

#### **Instructional Strategies**

Creativity Extravaganza!
Throwing Mud Pies in the Face of Tradition

John Perry (MS), Larry Anderson (MS), Andy Carvin (DC). Chip Daley (NV), Peter Reynolds (MA)

T035 Room: 361W Break out of your traditional mold! Enjoy a bevy of fun as experts reveal successful strategies that enable everyone to teach

creatively with technologies.

General: Teachers, Teacher Educators,
Postsecondary Educators

Changing the Questions: Students, Information Literacy, and the Web

Joyce Valenza (PA), Michael Wagman (PA)

T036 Room: 364W

This session will offer insight on how librarians and teachers can work together to change the questions they ask their students and to inspire their students to use information more meaningfully.

K-12; Teachers, Coordinators

#### **Fostering Critical Thinking**

Heads Up: Automated Capture, Integration, and Access in the Classroom

Meghan Burke (GA), Gregory Abowd (GA)

T037 Room: 158W

Automated capture is negating the need for classroom note taking, allowing students to focus more on the essence of discussions and classroom instruction.

Community College, University/College: Postsecondary Educators, Coordinators

The Adventure Agent Technology Club

Janet Johnson (GA)
T038

T038 Room: 360W
Learn how our students make an "adventure"
out of technology integration as they
conduct fact-finding missions and
presentations using available technology
in their schools.
4-8; Teachers

Assessing Student Learning and Connecting to Standards and Assessment

Evaluating the Effects of Technology Projects: Challenges and Approaches

Vera Uyehara (ND), Terri Austin (IN), Coy Isen (UT)

T039 Room: 254W
The quest for evaluation lies at the heart
of every new initiative. Several U.S.
Department of Education Technology
Innovation Challenge Grant projects share

"lessons learned" in designing evaluation methods and outcome analyses. General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Language Arts

Dobble Griswold (CA)

T040 Room: 257W

Get proven ideas and helpful hints for successfully integrating technology into the existing language arts curriculum. Leave with a list of useful resources and Web sites.

4-8; Teachers

Math and Science

Exciting Teaching Adventures in Science with National Geographic Materials

Kathryn Balley (GA)

T041 Room: 166W Think quality and variety! Using a combination of print and technology-based materials, upper-elementary and middle-school teachers are creating terrific science-based and cross-curricular teaching units.

4-8; Teachers, Teacher Educators, Coordinators



Are Your Students Ready for Algebra I? Technology Can Help! Robyn Silbey (MD)

T042

Room: 260W

Students succeed with a comprehensive. customizable middle-school math software program correlated to national standards. It addresses multiple intelligences as it diagnoses, prescribes, teaches, and assesses. 6-8: Teachers, Coordinators

#### Computer Science

**Teaching Computer Programming** Concepts Using Visual Basic\*

Beth Brown (FL)

Room: 363W T043

High school instructor and author of An Introduction to Programming Using Microsoft Visual Basic presents techniques for using Visual Basic to teach computer programming concepts.

Community College, University/College, 9-12: Teachers, Postsecondary Educators, Coordinators

#### Beowulf in High-School Computer Science

Cheri Burch (NM). Pacha Kaye (NM)

T044 Room: 366W Beowulf entered our high-school computer science curriculum when students embraced a group project building a supercomputer from a cluster of parallel, low-cost, off-the-

9-12; Teachers, Teacher Educators

#### Internet/Web

shelf processors.

SCR\*TEC Presents: How the Internet Works- An Overview

Douglas Adams (KS)

Room: 160W T045

Ever wonder how the Internet came about? Learn the answer to that question and many more in this introductory session. You'll also learn the basics of networks and TCP/IP, routers, domains, and e-mail.

General: Teachers. Teacher Educators. Postsecondary Educators

#### Tips, Tricks, and Techniques: Teaching Educational Computer Technology Online

Laura Turner (SD)

Room: 157W T046

Learn online educational technology teaching techniques that work. We will be employing WebCT and following ISTE standards. Software addressed: Office 97/ 2000, Windows® NT®. Netscape® Composer®, AppleWorks® (formerly ClarisWorks), and HyperStudio®.

K-12. Community College, University/College; Teachers, Teacher Educators, Postsecondary

#### Funding, Planning, and Implementation

Farragut Connected for Learning: Educational Foundation, Partnerships, Grants, and Funding Bill Parker (TN). Lovada Ferguson (TN)

T047 Room: 261W Find out how one high school partnered with local businesses, government, and higher education to help fund its technology needs. We will also look at grants and other sources of funding.

K-12: Teachers. Coordinators

#### Evaluation

#### Using Data to Plan and Assess the Effects of Technology

Bonnie Brownstein (NY). Tim Best (OH). Todd Heliman (OH)

Room: 256W Learn about a case study of an Ohio effort to capture appropriate data for planning and assessment. The online instruments will be

examined and results presented. K-12. Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Computer Applications for **School Administrators** 

John Thompson (NY)

Room: 156W

School administrators need to "walk the talk" in using computer applications to improve job performance. Get a solid overview of using computer technology in everyday administrative processes.

K-12; Coordinators

#### Staff Development

Empowering Teachers through a Technology Integration Academy Karin Porter (TX), Barbara Hunt (TX). LaDonna Conner (TX). Jan Jaeger (TX)

Room: 267W Because of limited support, time, and training, technology integration often is slow to develop. Learn about one possible solution to this problem.

K-6: Teachers, Teacher Educators, Coordinators

#### Professional Development-A Comprehensive Approach Lydotta Taylor (WV)

T051

From a nonprofit education organization that has trained more than 5,000 educators and community members in West Virginia. learn step-by-step how to build training programs and develop tools to assist teachers in enhancing classroom instruction through technology.

General; Teachers, Postsecondary Educators,

#### Preservice and Graduate Teacher Education

Jericho: University, Public Schools, and State Department- Future Teachers' Technology Training William (Bill) Fisk (SC), Lynn Noian (SC)

Room: 269W T052 K-16 innovation teams (language arts. science, math, social studies) match up technology skills and applications with state-mandated curriculum and develop technology-rich units for preservice teacher content, methods, and field

K-12, University/College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### Preservice Professional Portfolios Using State and National Standards Kristle Walsdorf (FL). Susan Lynn (FL)

experience classes.

Room: 268W T053 Investigate strategies for implementing online portfolios using state and national standards as well as techniques for teacher educators to assess preservice

teacher progress. K-12. Community College, University/College; Teachers, Teacher Educators, Postsecondary



#### STANDARDS. ASSESSMENT, AND ACCOUNTABILITY: STAYING CONNECTED

Technology and Teachers: Assessing Competencies, Assessing **Programs** 

Lajeane Thomas (LA), Peggy Kelly (CA). Leslie Conery (OR)

Room: 369W Following an overview of the extended fourphase NETS project by Project Director Laleane Thomas, participants will review and suggest enhancements to proposed assessment strategies and tools. This session provides attendees the opportunity to examine draft assessment strategies and instruments and to provide formative review in this important endeavor.

K-12, University/College, Teacher Educators, Coordinators



Room: 264W

# ONCURRENTSESSIONS

#### TUESDAY, 12 NOON-1 PM, CONT.

#### MOVING BEYOND THE **CROSSROADS: TEACHERS AS** AGENTS OF CHANGE

Fermilab LInC:

Online Leadership Development Strategies for Technology-Supported Constructivist Learning

Laura Mengel (IL), Sharon Gatz (IL). Stephen Meehan (IL)

T055

Room: 165W

Learn strategies developed over the past six years to foster constructivist learning and technology integration, facilitate national online and face-to-face professional development, and create leadership teams.

K-12, University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators



#### CONNECTED **COMMUNITIES:** SCHOOLS, BUSINESSES, AND RESOURCES

O Virtual Museum Projects to Reclaim and Preserve **Native Cultures** 

Paul Resta (TX). Shelly Valdez (NM). Marty de Montano (NY). Mark Christal (TX)

Room: 161W

A model of school and museum collaboration and culturally responsive curriculum is applied to the goal of preserving endangered Native American cultures.

General: Teachers, Postsecondary Educators

#### TUESDAY, 1:30-2:30 PM

#### **SPOTLIGHTS**

(a) Human Motion, Mechanical Physics, Videography, and Animation: How the Science of Biomechanics Uses the Power of Today's Computer Workstation Ben Johnson. Georgia State University

Room: Ballroom IV

Real-world examples of biomechanical analyses performed on Olympic and professional athletes, disabled athletes, the use of canes by the visually impaired, and workers performing occupational tasks will be presented. The science of biomechanics has great potential for influencing the delivery of mathematics, physics, and biological principles to today's middle and high school student.

6-12: Teachers, Teacher Educators

Meeting Standards for Staff **Development: Ensuring Quality** 

Joellen Killion, National Staff Development Council (CO)

T058 Room: Ballroom II/III

Review the National Staff Development Council's Standards for Staff Development with a member of the Council's staff. Discuss how these standards relate to technology staff development.

K-12; Coordinators

#### Beyond Technology to the New Literacy

Ted McCain, Thornburg Center for Professional Development (Canada). Ian Jukes (Canada)

T059

Room: Ballroom I

Learn how we can integrate critical thinking, problem solving, information literacy. the principals of graphical design, and a myriad of other 21st century skills into the learning environment.

General: Teachers



#### **BEYOND THE** CROSSROADS, WHERE DO WE **GO FROM HERE?**

Conversations on New Visions in Educational Technology Margo Nanny (CA). Henry Olds (MA)

T060 Room: 255W

Join education leaders to discuss key issues. Choose from Equity Issues, Research & Assessment, Creativity. Upgrading the Teaching Profession, and Quality Content for Future Media.

General, K-12: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### MarcoPolo: Setting the Agenda for a New Discipline

Caleb Schutz (VA). Caleb Schutz (VA)

Using partnerships with leading educational organizations. MarcoPolo provides safe and credible Internet content and professional development to K-12 teachers throughout the United States at no cost.

Room: 362W

Room: 368W

(Exhibitor presentation)

K-12, Community College, University/College; Teachers. Teacher Educators. Postsecondary Educators, Coordinators

#### DISTANCE LEARNING

**Balancing Face-to-Face and Online** Experiences in Higher Education Marsha Burmeister (FL). Charles Schlosser (FL)

The best of both worlds: a critical examination of the role of face-to-face instruction within the context of distancedelivered courses in higher education.

General, Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators

#### Prescriptions for Behavior Modification to Improve Success in Distance Learning

Cordella Twomey (NJ). Trudy Abrainson (FL)

Room: 158W

Teachers in distance learning programs will learn to identify predictors for student success and ways to help students modify their behaviors. This session will look at the learner, the technology, and the curriculum design; the possible barriers to student success; and ways to enhance student success.

General; Teachers, Teacher Educators, Postsecondary Educators



#### CONNECTING TECHNOLOGY TO TEACHING AND LEARNING

#### Instructional Strategies and Technology Integration

Technology Projects That Make It Home!

Christopher Curchy (FL). Keith Kyker (FL)

Room: 361W

Explore technology-based lessons and projects that are recorded in a format that students can easily take home and share with their parents. Seeing is believing.

General, K-12; Teachers, Teacher Educators Coordinators

#### Music

Music Education after 1999

Duane Duxbury (WA)

T065 Room: 364W

Get a close look at a MIDI environment where students learn music theory and keyboard skills for the purpose of writing music.

4-12; Teachers, Coordinators

#### **Technology Education**

Farragut Connected for Learning: Cisco Networking Academy Daniel Waters (TN). Bill Parker (TN)

T066 Room: 157W

Take a closer look at the Cisco Networking Academy, a technology-based curriculum course for teaching students about computer networks. Thanks to the academy, students are receiving a general education as well as preparation for the workforce.

Community College, University/College, 9-12; Teachers, Coordinators

#### Fostering Critical Thinking

Energized, Paperless Research Projects

James O'Neill (IL), Carleen Smith (IL)

Room: 360W

Give your students a new challenge. Instead of having them write a research paper, have them create Web pages or slideshow presentations. They'll become active researchers, publishers, and presenters.

9-12; Teachers, Coordinators



#### Laptops

Anywhere Now Learning: Universal Laptop Initiative

J. David Martin (VA), Janet Copenhaver (VA)

Room: 369W

The governmental and educational systems in Henry County, Virginia, are providing more than 6,000 laptops for home and school use to students in Grades 4-12. Hear how this group overcame obstacles, how it received funding, and how the learning process changed as a result.

General; Teachers, Teacher Educators, Coordinators

#### Language Arts

These Are the Days of Their Lives: Students' Author Presentations

Michael Lyons (GA), Louise Scott (GA)

Room: 257W

Join this entertaining and motivating session that combines reading. Web-based research. and computer technology. It also includes examples of student-produced PowerPoint® presentations of authors and books.

4-8; Teachers, Teacher Educators, Coordinators

#### Math and Science

Problem Solving Our Way **Back into Math** 

Pauline Bresnahan (WA), Nancy Wolfrum (WA)

Room: 254W T070

What do you get when you combine staff development, technology, and math? Teachers who are ready to approach their math instruction in a new way.

General, 4-8; Teachers, Coordinators

SeaTrek: Implementation of Telementors

in Middle-School Science

Mike Horan (FL). Barbara Kirkpatrick (FL)

**Room: 166W** 

Find out how the middle-school science curriculum in Sarasota. Florida, was enhanced with the implementation of a telementoring program linking scientists with students to promote student scientific inquiry.

4-12; Teachers. Coordinators

#### NASA Glenn Distance Learning Program

Ruth Peterson (OH)

T072 Room: 260W

Your students can get the scoop on current NASA research from the researchers and engineers themselves. Take virtual tours of NASA facilities through videoconferencing technologies.

General, K-12: Teachers, Teacher Educators. Coordinators

#### **Computer Science**

Cognitive Assessment of Students' Problem-Solving and Programming Skills Fadi Deek (NI)

T073

Room: 366W

Find out about an assessment method devised for measuring students' problemsolving and program development skills. knowledge perception, attitudes, and motivation toward problem solving and programming.

9–12, University/College, Community College; Teachers, Teacher Educators, Postsecondary Educators

#### **Special Needs** and Assistive Technology Computer-Based Literacy Training

for Adolescents and Adults

Judy Nantau (IL)

T074 Room: 363W

Explore the scientific theories, principles, and training components of teaching phonological awareness, auditory processing. and decoding skills using computer-based training. (Exhibitor presentation) Community College, 6-12; Teachers

#### Internet/Web

HyperInternet: Creating Interactive Internet Activities Jim Hirsch (TX)

Room: 160W

Experience how the Internet can be a more integral part of student-centered classrooms. Learn how to use HyperStudio® as an authoring tool to create a wide variety of activities that can be accessed on the Internet for student use at school and home.

K-12: Teachers. Coordinators

## **Support and Maintenance**

Real Help for the Help Desk: Students in Charge

Barbara Barr (KY). Charlanne Pook (KY)

T076 Room: 261W

Johnny's computer doesn't boot! The bookkeeper's balance doesn't compute! How do you keep computers humming on a shoestring? We put the students in charge!

General: Teachers. Postsecondary Educators. Coordinators

#### Evaluation

**O** D Beyond Standards: What We Are Learning from Conducting TechAudits Helen Stukota Jancich (IN). Howard Mchinger (IN)

Room: 256W

Learn how Phi Delta Kappa and the Indiana University Center for Research on Technology and Learning launched TechAudits to provide consulting to school districts.

General, K-12, University/College; Teachers, Teacher Educators, Postsecondary Educators. Coordinators



**Build Leadership Capacity and** Strong Technology Programs Linda Valenzuela (FL)

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Room: 156W

Leadership is the most important factor affecting the successful integration of technology. Discover the skills and knowledge needed to build personal and organizational leadership capacity. K-12; Teachers, Coordinators

#### Staff Development

**Evaluating Preservice Teacher Education Students' Technology** Competence and Confidence

Natalic Milman (VA), Philip Molebash (VA)

Room: 267W

Reports suggest that preservice teacher education students are inadequately prepared to effectively integrate technology into their future classrooms. Find out how universities are addressing these challenges.

University/College; Teacher Educators.

Coordinators

**6** Learning to Fish: A Staff Development Model for Self-Sufficiency

Sandy Paben (NY), Jackie LaRose (NY)

Room: 264W

This session will show you a unique staff development model that has changed the way teachers of all levels teach and students learn. It includes a support network for teacher follow-up.

General: Teachers, Coordinators

#### Preservice and Graduate Teacher Education

Integrating Technology into Preservice Teacher Instruction: A Collaborative Model

Mary Kolesinski (FL), Dana Fredebaugh (FL), Denise Callwood-Brathwaite (FL), Peter Watson (MA), Margaret McDaniels (FL)

Room: 268W T081 Representatives of various sectors of the

educational community present different perspectives on a collaborative project being funded. in part, by a U.S. Department of Education's Preparing Tomorrow's Teachers to Use Technology (PT³) Grant.

University/College, K-6; Teachers, Teacher Educators, Postsecondary Educators,

#### TUESDAY, 1:30-2:30 PM, CONT.

Preparing Tomorrow's Teachers for Diversity-Responsive, Technology-Rich Learning Kevin Rocap (CA), Maria Quezada (CA)

T082 Room: 269W Learn about the Equity through Distributed Education Network, an online clearinghouse and virtual world providing professional development resources for preservice and inservice teachers.

K-12: Teachers, Teacher Educators. Postsecondary Educators, Coordinators

#### MOVING BEYOND THE CROSSROADS: TEACHERS AS AGENTS OF CHANGE

🚾 Multimedia Mania: Classroom Models of Technology Infusion Caroline McCullen (NC). Paolo Williams (HI)

Room: 165W

See winning projects from the international multimedia competition. Learn classroom tips, multimedia techniques, and integration strategies from teachers at all levels. (Sponsored by ISTE's HyperSIG)

General, K-12; Teachers, Teacher Educators, Coordinators



**NSF Funding Opportunities** for High School and Undergraduate Computer Science, Math, and Science Faculty

Harriet Taylor (VA). Dianne Martin (VA). Michael Haney (VA)

Room: 161W

Don't miss this opportunity! National Science Foundation program directors will discuss funding opportunities and exemplary projects for computer science, mathematics, and science high school and undergraduate faculty.

9-12: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### TUESDAY, 1:30-3:30 PM

#### STUDENT SHOWCASE

Located on Level 2, opposite Room 265W.

#### Using Technology to Connect Students with the Community

Cindy Henderson, Pelham Road Elementary School (SC), with students Jennifer Pickens, Barbara Turner. Ellen Goldman

Elementary students describe and demonstrate the CD they designed. compiled, and created to spotlight the various facets of their community.

General, K-6: Teachers, Teacher Educators.

#### Student Support Team to the Rescue

Patrick Hiavaty, Brumby Elementary School (GA), with students Caroline St. John. Louis Lim. Kyle Manthe, Handa Yang

Meet students helping teachers load programs, instruct students for peer-to-peer teaching and learning, and help monitor computer labs.

K-6; Teachers

#### Under the Sea with Technology

Karen Roark, Whitfield County Schools (GA). with students Joshua Ellis, April Kinsey, Emily Manis. Sarah Manis, Emily Rush, Joshua Tucker, Molly Tucker, Susan Williams

Join us to find the answers to "Do dolphins surf the Web?" and "Can a whale e-mail?" as well as to track the message in the bottle and graph the ocean floor. Come see Save Our Oceans, a multimedia presentation and hidden treasure search.

K-12. teachers

#### Preservice Teachers' Technology Integration: Lessons from a PDS

B. Joyce Stallworth. The University of Alabama. with students Elizabeth Wilson. Kim Callison. Kathy Shaver, Margaret Rice See IT activities used by preservice teachers in a middle-school language arts class and lesson plans used at a professional development school (PDS).

University/College, 6-12; Teachers, Teacher Educators, Coordinators

#### **POSTERS**

All posters take place in Room 367W.

The Woodcliff School Travel Agency: Travel Projects by Students

Sharon Andelora (NI)

PS-T73-1:30. Table 12

After learning word processing, databases. and drawing, elementary- and middleschool students complete a travel project that includes an itinerary, maps, and databases of restaurants, hotels, places of interest, and Web sites.

K-12: Teachers. Coordinators

#### Let's Make It Real: Meaningful Integration for a New Millennium Lisl Behrend (SC), Anna Marie Bentfeld (SC). Libby Pressicy (SC), Jeanle Eskew (SC)

PS-T74-1:30, Table 4

Four primary-level teachers share successful strategies, lesson plans, and software for the integrating of technology into curriculum. Student work and projects are displayed.

K-3; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### How to Create an Internet Course in 10 Easy Steps

Susan Buchholz (GA), Deborah Huntley (GA), Brenda Cherry (GA)

PS-T75-1:30, Table 1

Find out how we faced the challenges of creating a Web-based course. What did we learn? What would we have done differently? Community College, University/College: Teachers

#### Guiding New Teachers "Beyond 2000"

Raymond Fehr (KY), Nancy Hack (KY). Rita Greer (KY)

PS-T76-1:30, Table 2

The new millennium has arrived in the Jefferson County Public Schools. See the interactive CD used in new teacher induction.

General: Teachers, Teacher Educators, Coordinators

#### Lighten Up! Color, Light, Optics, and Photography at Shutesbury Elementary Carol Holzberg (MA). Bonnie Roy (MA).

Ken Lindsay (MA), Jessica Harris (MA)

PS-T77-1:30, Table 5 See how Shutesbury Elementary kindergartners and fourth graders used

computers, digital cameras, and Internet research to conduct scientific investigations of color, light, and vision.

General, K-12: Teachers, Coordinators

#### Assessing Immediate and Long-Term Benefits of Interactive Studio Physics Michael Kalsher (NY), Holly Traver (NY)

PS-T78-1:30, Table 8

A study reveals that interactive courses do not produce better grade performance than lecture courses. However, students find interactive course collaboration beneficial for modeling real-world teamwork.

General, University/College: Teachers. Coordinators

#### **SATEC: Integrating Mathematics** and Technology

Thomas Ledvorowski (TX). Andrew Sorensen (TX)

PS-T79-1:30, Table 9

Learn how teachers are helping students build mathematical concepts through the use of video imaging, data collection tools, spreadsheet software, and other technologies.

6-12: Teachers. Teacher Educators. Coordinators, Postsecondary Educators



Integrating Technology for the Needs of High-Achieving or Gifted Students Lucia Mitcheli (NJ). Gallen Mitcheli (NJ)

PS-T80-1:30, Table 3

Technology is a wonderful vehicle for meeting the needs of high-achieving and gifted students. Learn what is available and what will work for you!

K-8; Teachers, Teacher Educators, Coordinators

CyberGreening: Technology and Environmental Education in the Urban School Holly Shaw (PA). Valeric Adams (PA)

PS-T81-1:30, Table 10

We will share a comprehensive environmental project for middle schoolers that includes creating and maintaining an urban garden and using technological tools to enhance project-related presentations.

6-8; Teachers. Coordinators

Fine Art + Technology:
Motivating Student Learning
in Art Classrooms by Integrating
CD-ROMs and the Internet
Yan Sun (OH)

PS-T82-1:30, Table 6

Discover ways to encourage active learning in fine art classrooms using a multimedia CD and the Internet. Hear integration tips to ensure effectiveness.

General, Community College, University/College, 9-12; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

The Digital Camera and Its Uses in the Classroom

Andy Ventress (IL)

PS-T83-1:30, Table 11

Learn how best to use the digital camera (Casio QV8000SX) in your classroom. Take home handouts with sample activities.

General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Little Village to Global Village Marlene Woytonik (IL). Sue Sherman (IL)

PS-T84-1:30, Table 7

Discover how to plan and implement a multidisciplinary project in which students investigate the historical and cultural background of their communities.

K-12: Teachers, Teacher Educators, Coordinators

#### **WEB POSTERS**

All posters take place in Room 367W.

Creative Use of Cyberspace: Training Teachers for Inclusion Robin Barton (GA). Mikki Garcia (GA). Kim Sinshauser (GA)

IPS-T85-1:30, Table 18

Learn what goes into the development and use of online, multimedia modules for a Web-based course: Teaching and the Exceptional Child. The course addresses instructional strategies and special education law.

General, Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators Creating a Media Center Home Page Shu-Hsien Chen (GA), Leticia Ekhami (GA)

IPS-T86-1:30, Table 19

Visit a middle-school media center home page. Hear the presenters' experiences designing it.

General, K-12; Coordinators

Digital Bridges: The K-12 Videoconferencing Web Resource for Teachers & Planners Kirk deFord (OR)

IPS-T87-1:30, Table 17

Visit the Digital Bridges Web Site and learn about the content and the basis for this interactive and planning Web resource.

General, K-12; Teachers, Teacher Educators, Coordinators

CNN Student Bureau: Kids, Cameras, and Computers-Real-World Classroom Experiences Sherri Garrett (GA), Alan Duke (GA)

IPS-T88-1:30, Table 20

The CNN Student Bureau Web site puts authentic learning experiences in students hands. Gain hands-on experiences in writing, editing, and producing for a global audience.

Community College. University/College. 9-12: Teachers. Postsecondary Educators. Coordinators

Using a Class Web Site to Teach, Manage, and Motivate Roderick Haines (CA)

IPS-T89-1:30, Table 14

Learn ways to fully integrate a class Web site into your current curriculum and to facilitate your professional growth needs.

4-12; Teachers, Teacher Educators, Coordinators

#### 42eXplore:

An Approach to Internet Integration Larry Johnson (TX). Annette Lamb (TX)

IPS-T91-1:30, Table 13

Each week 42eXplore (http://eduscapes.com/ 42explore) focuses on an interesting topic, at least four supplementary Web site starting points, and lots of technology integration activities. Come explore!

General. K-12. Community College. University/ College: Teachers. Teacher Educators. Postsecondary Educators, Coordinators

Technology for General Physics Courses

Gene Kuleshov (NY), Helene Bergman (NY). Issac Herskowitz (NY)

IPS-T92-1:30, Table 15

The Web Course in the Box provides access to a wide range of resources: animated illustration software. virtual labs. computerized tests, and Web link tutorials. University/College; Teachers. Coordinators

Integrating Technology with Standards in Mind: A Preservice Approach

Susan Ridout (IN), Jane Riehl, Cari deGraaf

IPS-T93-1:30, Table 16

Teacher education students are effectively creating technologically rich language arts units based on newly adopted standards.

General: Teachers, Teacher Educators

What Is under the Covers of an Online Course?

Stan Silverman (NY). Gene Silverman (NY)

IPS-T94-1:30, Table 24

View the guts of an online course for teachers. See e-lectures, assignment rubrics, team activities, and student evaluations.

General: Teachers, Teacher Educators, Postsecondary Educators

Montclair Learning Interchange: Where Teachers Create Content and Share Resources

Paul Tarantiles (NJ), Maria Narciso (NJ), Samantha Morra (NI), Lois Tannous (NI)

IPS-T95-1:30, Table 23

Visit the Montclair Learning Interchange (http://mli.montclair.k12.nj.us). where teachers post projects and share Internet resources. The site can also be used as a staff development tool!

K-12: Teachers. Teacher Educators. Coordinators

Using Internet Technology as a Tool for Assessment and Reflection Mary Richards (ME)

IPS-T96-1:30, Table 22

Maine school districts are using the Internet to assess student performance on key state standards. See how this process works and hear the benefits described by participants.

K-12: Teachers. Teacher Educators. Coordinators

Developing and Integrating Web-Based Resources for Curricular Support Kesheng Yu (NY)

IPS-T96a-1:30, Table 21

The goal of the curricular support group is to provide faculty members with the technology, tools, and support needed to enhance the curriculum.

General, University/College; Postsecondary Educators, Coordinators



#### TUESDAY, 3-4 PM

#### **SPOTLIGHTS**

• NetSchools- Transforming Education

Tom Greaves, NetSchools Corporation (CA)

Room: Ballroom II/III T085 The Study Pro laptop enables every student to have continuous broadband access to the Internet. Find out how connecting teachers and students to the Web, their parents and the community can generate A's in achievement, assessment, accountability, alignment, and access equity. Includes a drawing for prizes!

K-12: Teachers, Teacher Educators, Coordinators

O NECA LIGHTS:

Extending Our Experience and Building a Web of Teachers

Nan Fiickinger, Janet Lane, Mary Winn. Linda Wahlig, and Julie Trell, Sandy Springs Middle School (GA): Elliot Soloway (MI): Gretchen Hahn (MI); Lauretta Burton (GA)

Room: Ballroom I Georgia's NECA LIGHTS 2000 teachers join past participants to tell stories of learning from one another as they embedded technology into their best practices.

K-12; Teachers, Coordinators

Connecting the Crossroads: Connecting to the Future

Linda Roberts, U.S. Office of Educational Technology

T087

Room: Ballroom IV As our schools enter the new millennium, technology will increasingly play a role in teaching and learning. Roberts will highlight the Clinton administration's strategies and accomplishments and provide a preview of next steps and future commitments contemplated for the next five-year national plan for technology.

K-12: Coordinators

#### **PAPERS**

Two papers per one-hour session.

Interactive Computer Models for Science Education

Hisham Ai-Haddad (WV). Mike Little (WV)

Room: 166W

The authors will illustrate the major role interactive learning and critical thinking play in high-school education, especially in the field of science. Teaching traditional science concepts in innovative ways helps increase students' knowledge and promote their interest in the basic sciences. See the models described in the paper and how high-school teachers are using them in a number of science classes.

9-12; Teachers

Wheatland:

An Exercise in Systemic Change Debra Dirksen (CO), Major Donald Tharp

Room: 166W

Hear the evaluation results of a rural school district's professional development Goals 2000-funded efforts to provide all teachers and administrators in the district with training and laptop computers.

K-12, University/College; Coordinators, Postsecondary Educators

Web-Based Extended Learning through Discussion Forums

Mary Jo Parker (TX)

T090 Room: 156W

AP biology labs create the focal discussion threads for an online forum between two campuses within one district. User tracking throughout the forum will be analyzed.

9-12: Teachers, Coordinators

Images of Teaching with Computer Technology: A Metaphorical Perspective

Karthigeyan Subramaniam (New Zealand)

practice with computer technology.

Room: 156W Illuminating teachers' images of teaching with computer technology using metaphors: A perspective on teachers' language of

General, K-12, Continunity College, University/ College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### **BEYOND THE** CROSSROADS, WHERE DO WE **GO FROM HERE?**

Taking Responsibility for Our Global Society

Andrea Sage (New Zealand). Megan McDonald (New Zealand)

T092

Room: 255W

Discover how New Zealand's heritage of appreciating and successfully managing its natural resources, combined with a multimedia approach to education, inspired a profound learning experience for students that encouraged empathy. tolerance, and respect.

General: Teachers

Communicating a Strategic Vision of Education Technology to Key **Decision Makers** 

Connie Stout (TX)

T093

Room: 254W

Discussions with key decision makers getting you down? Get EDvancenet tools that provide research-based information on technology and student achievement. educational equity, and workforce preparedness. (Sponsored by COSN)

K-12; Coordinators

Enriching the Learning Experience: The Value of a FirstClass Solution Scott Weich (ON)

Room: 362W TOQ4

Experience the power of a FirstClass educational community. This session will highlight FirstClass as the most effective solution for building a collaborative community of learners. (Exhibitor presentation)

General, K-12, Community College, University, College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### DISTANCE LEARNING

Designing Courses with CLASS® Web-Based Courses for Distance Learning

Kathy Northrop (NE), Cindy Roiné (NE)

Room: 368W

CLASS™ award-winning Web-based courses are designed to maximize student learning using leading-edge technology. Learn what's involved in creating courses for a complete Web-based high school diploma sequence.

General; Teachers. Postsecondary Educators

#### CONNECTING **TECHNOLOGY TO TEACHING** AND LEARNING

Instructional Strategies and **Technology Integration** 

Bring the World to Your Classroom through National Geographic School Publishing Educational **Web Site Products** 

Dorothy Perreca (DC), Kathy Balley

T096

Room: 369W

The new National Geographic Education Web Site provides teachers and students with materials for creating innovative projects and reports.

K-12; Teachers, Coordinators

O Project K12-Search: Lessons and Search Interface for Electronic Information Literacy David Raker (MA), Jamie Callan (PA)

Room: 257W What use is the Internet, if students can't use it effectively? K12-Search is a collaborative project that attempts to address the challenges and rectify the problems faced in

many elementary school classrooms. K-12; Teachers. Coordinators



# ONCURRENT\_SESSION

**Qo** Wired for Success:

A Cross-Curricular Collaboration Jennifer Walts (GA), Regina Baker (GA), Sharon Joiner (GA). Cathy Lane (GA)

T098

Room: 361W

This fast-paced session will give you renewed enthusiasm for tackling technology, readyto-use ideas, reasons to collaborate, and a recipe for success!

K-6; Teachers Teacher Educators. Coordinators

**Project-Based Learning** 

Linking Learning to Life: Model, Tools, and Strategies Linking **Electronic and Real Communities** 

Pat Donohue (ND). Vera Uyehara (ND). Jerry Feltis (ND), Mary Beth Kelley-Lowe (ND), Steve Lindaas (ND), Alison Wallace (ND)

T099

Room: 364W

Extending technology experiences to realworld adventures gives learners an opportunity to construct personal understandings of new material, then use problem-solving skills to transfer understanding to new environments.

General, K-12, Community College, University/ College: Teachers, Teacher Educators, Coordinators

#### **Fostering Critical Thinking**

Expand Student Research and Technology Skills with Spreadsheets Jan Rader (CA)

Experience the fun of performing simple data collection activities and using electronic spreadsheets to easily record and brilliantly display the findings (in any content area).

General, K-12; Teachers, Teacher Educators, Coordinators

#### Language Arts and Social Studies

They Came to Ellis Island: Using the Computer to Study Immigration Denise Crisci (NY)

T101

Room: 261W

Learn how to use the power of technology to relive the immigrant experience.

4-8; Teachers, Teacher Educators, Coordinators

#### Computer Science

Teaching Computer Science with Java: The Good, the Bad, and the Ugly Tom West (Canada)

T102

Room: 366W

Examine important issues such as student expectations, development environments. hardware requirements, teaching issues (objects first), and questions such as "What about the AP?

9-12; University/College: Teachers. Teacher Educators, Postsecondary Educators

#### Special Needs and Assistive Technology

Project DEVISE: Creating Virtual Reality Environments for Students with Learning Disabilities

Debra Sprague (VA). Chris Dede (VA). John Castellani (VA), Mike Behrmann (VA), Jim Chen (VA)

Room: 165W

Students with learning disabilities often have difficulty understanding abstract science concepts. We have developed and implemented three-dimensional virtual environments that enhance their learning and motivation.

General, 9-12: Teachers, Teacher Educators

#### Internet/Web

Alternative Classrooms: Effective Learning Anywhere, Anytime Suzanne Miller (CA)

T104

Room: 363W Explore how to use technology to create anytime, anypiace alternative classrooms for students while maintaining the integrity of the curriculum. (Exhibitor presentation)

K-12; Teachers, Coordinators

#### Adding Asynchronicity to Your Learning Environment with Technology

Curt Minich (PA)

T105

Room: 160W Allow your students to interact with classmates, teachers, and learning materials at any time of the day from any location

with free, easy-to-use Internet technologies. Community College, University/College, 6-12; Teachers, Teacher Educators, Postsecondary Educators

#### Funding, Planning, and Implementation

You Want It to Do What? When? Coordination in a Districtwide Network Janet Melzel (CA)

Room: 256W

Learn the most effective steps in building the districtwide network you need. General, K-12: Coordinators

#### Staff Development

Virtual Academy: An Online Staff **Development and Community Project** Juli Garton (WI), Louis Loeffler (WI), Kristine Diener (WI). Susan Hodges (WI)

T107

Room: 267W Learning occurs 24 hours a day at the Virtual Academy, (www.stritch.edu/~techacad/ virtual), where staff development is

presented anytime, anyplace, and at any learning pace. Learn how to create effective online courses for your students.

General. K-12. Community College, University/ College: Teachers. Teacher Educators, Postsecondary Educators, Coordinators

Oo Lighthouse Links ... Teachers Helping Teachers Integrate Technology Laura Mates (IN), Renee Driskell (IN).

Cathy McFarland (IN)

Room: 268W

Join us as we share ideas for implementing a teacher-to-teacher mentoring model focusing on the curriculum integration of technology. (Sponsored by ACM/SIGCUE) K-12; Teachers, Coordinators

#### Successful Professional Development Doesn't Just Happen

Kelly Starr (WA). Greg Butler (WA)

Room: 264W

Teacher professional development requires much more than machine and software training. Learn how individual teacher skill assessment, goal setting, and resource linking can become foundations for your professional development program.

K-12; Teachers, Coordinators

#### Preservice and Graduate **Teacher Education**

Models for Change: Streamed Video Connects University and K-12 Model Classrooms M. D. Roblyer (GA). O. P. Cooper (GA). William Wiencke (GA)

T110

Room: 269W Learn how streamed video links model classrooms in schools to those in a teacher education program to promote collaborations between preservice teachers, K-12 students, and faculty.

General, K-12; University/College; Teachers. Teacher Educators, Coordinators



#### STANDARDS, ASSESSMENT, AND **ACCOUNTABILITY:** STAYING CONNECTED

Find Your Way through the Multimedia Maze Roberta Marshail (TX), Beverly Burks (TX)

T111

Room: 157W

Presenters will help you navigate through the maze of multimedia software features by demonstrating and comparing six popular programs from AppleWorks® slideshow to PowerPoint\*.

General: Teachers, Teacher Educators, Coordinators



#### TUESDAY, 3-4 PM, CONT.



through RITS Nights- A Community Educational-Technology Model

Joan Parris (AL), Cindy McCoy, Matt Akin

T112 Room: 161W
Learn how Deshler High School in Alabama
took a \$10,000 grant and stretched it to
benefit students, teachers, administrators,
staff, and community members through the
Research, Inservice, and Technology in a Safe
Environment (RITS) Nights Project.

Emerging Technologies: College Guidance and Admissions Meet the Internet

General, K-12; Teachers, Coordinators

Young Shin (CA)

T113

Room: 158W

Internet solutions provide students, educators, and administrators with new options for effectively managing college guidance and admissions.

Community College, University/College, 9-12; Coordinators

# Social, Ethical, and Policy Issues

Policy- and Regulation-Driven Technology Reform and Implementation

Hank Stabler (AZ), Ladd Bausch (AZ), Shawn Wheeler (AZ), Debra Raeder

T114

Room: 260W

Learn about the government, district, and school policies: regulations, procedures, and guidelines that facilitate smooth educational-technology reform and implementation.

General, K-12, Community College, University/ College; Teacher Educators, Postsecondary Educators, Coordinators

#### TUESDAY, 4:30-5:30 PM

#### **SPOTLIGHTS**

Evaluating Technology
Effectiveness: The Quest for the Elusive "Best Way"

Michael Hannafin, University of Georgia

T115 Room: Ballroom II/III Explore research and evaluation findings on the effects of technology in K-12 settings. Identify problems and issues related to evaluating and identifying the characteristics of effective programs.

K-12; Teachers, Teacher Educators, Coordinators

Key Factors in Effective Staff Development

Jeanie Weathersby, Georgia State University

T116 Room: Ballroom IV
Find out about strategies for staff
development linked to student achievement.
Hear important practices schools should
consider when making staff development
decisions

General, K-12; Teachers, Coordinators

#### **PAPER**

Active Learning Strategies in Computer Graphics

Ronald Curtis (NJ), John Najarian (NJ)

7 Room: 366W

Active learning models are applied to computer graphics. A progression of student activities builds on student contributions to the learning experience.

Community College, University/College; Postsecondary Educators

# BEYOND THE

CROSSROADS, WHERE DO WE GO FROM HERE?

Cincinnati Public Schools Wired for the Future

David Hickey (OH), Gini Browsh (OH)

T118 Room: 254W Learn how Cincinnati Public Schools is providing Internet connectivity to more than 2,600 classrooms and 85 sites using the latest in network technologies: asynchronous transfer mode (ATM).

General, K-12. Community College, University/ College: Teachers, Teacher Educators, Coordinators

Information Technology Enterprises: A Student Technology Support Business

Taylor Hill (OK), Regina Barsh (OK), Dana Mason (OK), Sara Schoenefeld (OK)

Room: 255W

Learn how students earn credit by operating a PC repair shop that services the technology infrastructure of more than 90 district sites. 9-12; Teachers, Coordinators

Grow What You Know with Web-and-Flow

Thomas March (NSW)

T120

Room: 257W

How can you integrate the Web and still have a life? Use Web-and-Flow, Tom March's latest creation designed as a comprehensive tool, online community, and professional development courseware.

General, K-12: Teachers, Teacher Educators, Coordinators

Windows 2000 in Education

David Tapang (WA), Don Keeler (MO)

T121 Room: 362W
Don't miss this opportunity to see a
demonstration of the exciting new
capabilities of Windows 2000 presented
by Microsoft® personnel.
(Exhibitor presentation)

General, K-12, Community College, University/ College; Teachers, Coordinators

#### DISTANCE LEARNING

Online and On Target: Critical Issues for Effective Internet Courses Raymond Rose (MA), Zahri Schoeny (VA).
Alice Smith (MA)

T122 Room: 368W

This panel will identify the critical issues such as structure, preparation, and intimacy that online course developers and consumers need to consider as they explore the universe of online courses.

General; Teachers, Teacher Educators, Postsecondary Educators

# CONNECTING TECHNOLOGY TO TEACHING AND LEARNING

Technology-Assisted Project-Based Learning

Anthony Jongejan (WA), Kathy Buchanan (WA)

T123 Room: 364W
Learn effective use of technology in projectbased learning for the elementary- and
middle-school classroom through discussion

and demonstration.
4-8; Teachers, Teacher Educators, Coordinators

#### **Empowering Students**

Coach Your Students to Take the Lead! R\*TEC Presents Key Strategies Christina Blauer (KS)

T124

Room: 360W

Find out about a variety of models, tools, and organizations facilitating student leadership and support in the integration of new technologies in K-12 classrooms.

General; Teachers, Teacher Educators. Coordinators



#### **Assessing Student Learning** and Connecting to Standards and Assessment

23 The Electronic Learning Marketplace: A Growing Resource to Support Standards-Based Curriculum and Assessment

Rebecca Meinking (ME). Julie Ellis

Room: 156W Explore the Electronic Learning Marketplace, funded by a U.S. Department of Education Technology Innovation Challenge Grant in Maine. Learn about the project's evolution, tour the Web site, and offer feedback on a published assessment. Then find out how the project is helping teachers align their work with state standards.

K-12; Teachers, Teacher Educators

#### Laptops

Ubiquitous Computing and Achievement:

The Laptop Program's Third Year Saul Rockman (CA), Melissa Chessier (CA)

T125a Room: 363W In 1996, the Microsoft Corporation initiated

a laptop program to explore how student learning was affected by access to personal laptop computers. Three years on, what changes have been observed?

General, K-12: Teachers. Teacher Educators, Coordinators

#### Preschool and Elementary

100 Technology Projects in the **Elementary Classroom** 

Christine Beck (OR), Monica Wallace (OR)

Room: 165W Get lessons and ideas for integrating technology into the elementary classroom. See examples of actual uses of technology

products and Web sites for teaching. General, K-8: Teachers, Teacher Educators, Coordinators

Empower Students with Curriculum and Technology Bob Smith (CA). Linda Reynolds (CA)

Room: 363W Join fourth and fifth graders on a successful journey integrating curriculum and technology as they develop their own informational CD-ROM: "The Mojave Desert-A Child's View.

K-12: Teachers, Coordinators

#### **Language Arts** and Social Studies

Bridges Across the Atlantic: Using Technology to Share Cultures Margaret Thombs (R1). Deanne Forgue

T128

Room: 261W

Learn how fourth-grade students in Rhode Island connected with a Swedish class to share culture and knowledge using e-mail and the Internet.

General. K-12: Teachers. Teacher Educators. Coordinators

Technology Creates Enthusiasm for Reading!

Paula Yohe (SC)

T129 Room: Ballroom I See how a variety of technologies can be used in conjunction to motivate students to read. Independent research reveals how test scores in one school have risen as a result of its award-winning library media center.

K-12; Teachers, Coordinators

#### Math and Science

The Amchitka Study: Otters, Aleuts, and Urchins

Thomas Layton (WA)

T130 Room: 166W High-school and college students can use

computers and calculators to analyze an Alaskan village site and gain insight into an ancient culture and the marine ecology of the past.

Community College, 9-12: Teachers. Coordinators

#### Special Needs and Assistive Technology

Virtually There: VR Design Options for Students with Special Needs William Wiencke (GA), M. D. Roblyer (GA)

Room: 369W Review past virtual reality (VR) applications

for students with physical and cognitive disabilities, discuss VR design options for these students, and demonstrate VR working models.

General: Teachers, Coordinators

#### Internet/Web

Technology-Enhanced **Short-Distance Learning** 

Chris Clark (IN), Margaret Anderson

See how a variety of on-campus classes use the Web to deliver tests, conduct discussions. and present content. Share your experiences.

General: Teachers, Teacher Educators, Coordinators, Postsecondary Educators

Teaching with the Internet: Creating "Internetized" Lessons Sheila Gersh (NY)

T133 Room: 160W Learn how to take your traditional lessons

and "Internetize" them. Become familiar with hundreds of Internet resources available for your instruction. These will help you create your lessons, projects, cyberguides, and WebQuests.

K-12, University/College; Teachers, Teacher Educators, Coordinators

#### Multimedia

Powerful Pupil PowerPoint **Presentations Produce Learning** 

Harry Tuttle (NY) T134

Room: 157W

Learn how to make your students PowerPoint presentations powerhouses of learning. See how to streamline the process while enlarging the depth of learning. General: Teachers, Coordinators

#### Funding, Planning, and **Implementation**

**Educational Technology Plans:** Keys for Successful Implementation and Accountability David Breithaupt (ID)

T135

Room: 256W

Uncover the keys to instilling an effective K-12 technology plan that connects technology use to the needs of the curriculum, curricular objectives, and the capabilities of the teacher and school.

K-12: Teachers, Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Staff Development International Professional Development from a Local Perspective

Kitty Salinas (CA). Helen Coltrinari (Canada)

T136

**Room: 158W** 

Room: 267W

Internet technology enables video instruction to transcend political and cultural barriers. Find out how in this demonstration. Presenters will address cultural issues intrinsic in sharing wisdom across borders.

K-12; Teachers, Teacher Educators, Coordinators

Georgia to Louisiana: Connecting Technology, Teaching, and Learning Through InTech

Sheila Talamo (LA), Joana Dicterich (LA). Adrianne Hunt (LA), Linda Whitacre (GA)

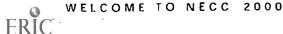
Room: 264W

From Georgia to Louisiana, teachers are integrating technology into their classroom. Discover Louisiana InTech and its successful replication of the Georgia InTech Professional Development Model.

General, K-12, University/College: Teachers. Teacher Educators, Coordinators

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PLEASE SEE OUR LISTING ON PAGE 68



#### TUESDAY, 4:30-5:30 PM, CONT.

#### Preservice and Graduate **Teacher Education**

O ISTE's PT3 Grant Initiatives: **NETS for Teachers and the National** Center for PT3

Heidi Rogers (ID). Peggy Kelly (CA). Don Knezek (TX). Lajeane Thomas (LA)

Room: 269W

Details of project activities, services, and products will be discussed by the leadership team and key partners of ISTE's PT3 grant initiatives: NETS for Teachers and the National Center for Preparing Tomorrow's Teachers to Use Technology (NCPT3). Participants will learn specifically how they may benefit from and contribute to this and other important work of the International Society for Technology in Education. (Sponsored by ISTE)

K-12, University/College; Teacher Educators. Postsecondary Educators, Coordinators

#### Let's Communicate! Using Technology to Support Preservice teachers

Trena Wilkerson (TX)

T139

Room: 268W How can technologies such as e-mail. videoconferencing, and multimedia be used to enhance communication with preservice teachers? One instructor shares her experiences and ideas.

University/College: Teacher Educators

CONNECTED **COMMUNITIES:** SCHOOLS, BUSINESSES, AND RESOURCES

MarcoPolo Internet Content for the Classroom: Building Quality Partnerships within the Education Community Todd Brekhus (VA). Lennie Walker. Dan Thoms

Room: 161W

Explore the value of establishing lasting partnerships within the educational community for developing quality content. delivering professional development, and meeting the needs of K-12 teachers.

General: Teachers. Teacher Educators. Postsecondary Educators. Coordinators

#### Social, Ethical, and Policy Issues

Computer Camp: Effects on Girls' Computer Attitudes and Skills Sandra Madison (WI), Min Deng (WI)

Room: 260W

Many middle-school girls view computing as a "nerdy" male activity and avoid taking advanced computer courses. Learn how a one-week computer camp changed their attitudes toward computers and increased their skill level.

General; Teachers. Postsecondary Educators

#### TUESDAY, 5:45-6:45 PM

#### U.S. DOE Session on Assistive Technology

Access to Information through **Assistive Technology** 

Joe Tozzi (Washington D.C.). Don Barrett (Washington D.C.), Alex Koudry (Washington D.C.)

Ballroom IV

The Assistive Technology Team from the U.S. Department of Education presents this session and demonstration addressing the use of computer-based assistive technology to bring information and information systems to the disabled. The requirements of Section 508 of the Rehabilitation Act of 1973, as amended, will be addressed. A Q & A period will follow the demonstration.

K-12, University/College; Teacher Educators. Postsecondary Educators. Coordinators

Critical Review: Two Models of an Online Course Room: 161W

Brenda Dressler

Certification Programs in High Schools Room: 165W Scott Horan

MidLink Magazine: How to Publish Meaningful Content with Students

Room: 368W Caroline McCullen

**Project Child** Room: 369W Barbara Rouse

Ozline.com Room: 156W Thomas March

Creating K-12 Educational **Technology Coordinators** Room: 158W Diane Smith

Beyond Nintendo: **Technology Applications** in the Elementary Classroom Room: 363W Charlene Woodham-Peace

CHECK THE DAILY NEWSLETTER FOR **ADDITIONAL THRASHERS TOPICS!** 

#### TUESDAY, 5:45-6:45 PM



More topics and sessions may be available. See the NECC Info Booth and/or the daily newsletter for additional topics added since press time.

Bilingual, ESL, and Foreign Languages Room: 366W Jorge Almina, Ana Bishop, Patricia Sarango

Rural Schools and Technology Room: 363W LeAnne Brown

Online Instructors- Professors Teaching on the World Wide Web Room: 166W Marsha Burmeister

WWEDU: The Web and Education Listservs Room: 361W Andy Carvin



#### WEDNESDAY, 8:30-9:45 AM

#### **KEYNOTE**

Eye for Opportunity

Duane Ackerman, Chairman/CEO, BellSouth Corporation (GA)

W001

Room: Hall G

Ackerman will focus on the enormous opportunities that the information economy and broadband technologies have created for students as learners and future employees, for educators as shapers of technology and technology use, and for communities as the standard-bearers for quality of life. His perspective arises from the breadth of BellSouth operations, which provide telecommunications, wireless communications, cable and digital television, advertising and publishing, and Internet and data services to more than 36 million customers in 20 countries worldwide.

#### WEDNESDAY, 10 AW-12 NOON

#### STUDENT SHOWCASE

Located on Level 2, opposite room 265W.

Integrating Technology into the Classroom Using a Project-Based Approach

Carl Davis, University of Alabama-Huntsville, with student Edna Gentry

Students and teachers demonstrate how a project-based classroom has transformed learning into an exciting experience, guided by the teacher and driven by the students' interests.

K-12, University/College; Teachers, Teacher Educators, Coordinators

# Fifth Grade Will Never Be the Same (The Best and Longest Year of My Life)

Charlotte Dreher, Shallowford Falls Elementary School-Cobb County Schools (GA), with students Laura Scott. Ryan Forman, Philip Krogel, Erin Fleming, Julia Harris. Fifth Grade students will demonstrate projects completed with PowerPoint\*, Microsoft\* Word, the Internet. TimeLiner\*, and Flash\* 4 software.

## The Adventure Agent Technology Club

Janet Johnson. Atlanta Public Schools (GA)

Learn how our students make an "adventure"
out of technology integration as they
conduct fact-finding missions and make
presentations using technology available
in their schools.

K-12; Teachers, Coordinators

#### **POSTERS**

All Web posters take place in Room 367W.

Building School and University Partnerships for Educational Reform Ron Aust (KS). Loriene Roy (TX).

Ron Aust (KS), Loriene Roy (TX)
Brian Newberry (KS)

#### PS-W97-10, Table 9

How can schools and universities best partner to apply technology to curriculum reform? Four Directions partners describe successful collaborations across 4 universities and 19 schools.

K-12, Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

## The Education Connection Grant, Southern Style

DeAnna Blaylock (MS). Eva Guice (MS). Pam Berberette (MS)

#### PS-W98-10, Table 4

See how Mississippi educators radically changed their teaching styles through a partnership with their local public television station and participation in a technology challenge grant.

General, K-6; Teachers, Teacher Educators, Coordinators

#### MetroLINC: An Urban-Suburban Collaboration for Technology Professional Development

Lisa Breit (MA), Alice Santiago (MA)

#### PS-W99-10, Table 8

Learn how MetroLINC is bringing 4.500 teachers up the technology learning curve to support statewide curriculum reform in Massachusetts through a unique urbansuburban collaboration.

K-12; Teachers. Teacher Educators. Coordinators

#### Wish You Were Here: Virtual Vacations

Beverly Burks (TX), Roberta Marshall (TX). Carol Shields (TX)

#### PS-W100-10, Table 6

Students used digital cameras, scanned images, graphics, and text to record vacation memories. Learn how this motivating project can be implemented in your classroom.

K-12: Teachers, Teacher Educators, Coordinators

#### Just for Kids

Leticia Ekhami (GA). Shu-Hsien Chen (GA)

#### PS-W101-10, Table 7

Receive new classroom curriculum ideas derivable from the fascinating, valuable, and user-friendly resources found on Web pages designed for students by U.S. government agencies.

K-12: Teachers, Teacher Educators, Coordinators

## Integrating Online Projects into Your Curriculum

Rita Harris Watts (NC). Patricia Mediin (NC). Donna Ashmus (NC)

#### PS-W102-10, Table 12

Need ideas for integrating inexpensive online projects in your curriculum? See and learn about actual projects created by teachers.

K-12; Teachers, Coordinators, Teacher Educators

#### STC Digital: Virtual Support for School Technology Coordinators

Susan Lancaster (KY). Jana Hickey (KY). Judy Reeves (KY). Karen Ender (KY) Cheryl Hepp Basham (KY). Roger Basham (KY), Keith Barnes. Pat Meurer (KY)

#### PS-W103-10, Table 3

Check out a Web-based resource designed to support the school technology coordinator as technology leader, administrator, and provider of technical support. Also promotes professional development.

K-12: Teachers, Coordinators

#### Help Your Students Gain Real-Life Experience with an Internet Stock Market Simulation

Jeanne Moellendick (NY)

#### PS-W104-10, Table 5

Students learn research, synthesis, analysis and decision-making skills when they invest \$100,000 of virtual money in free stock market competitions featured on www.MainXed.com. Teacher's guide correlates to standards.

General: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### Linux from 20,000 Feet: Executive-Level Evaluation of Linux and Other UNIX Derivatives Richard Williams (IN), Brenda Williams (IL)

#### PS-W105-10, Table 10

Explore executive-level evaluations of Linux and other UNIX derivatives in enough detail to ensure informed consideration of alternative operating systems in an academic environment.

Community College, University/College, 6-12: Postsecondary Educators, Coordinators

# Enriched Lesson Plans with Computer Multimedia Yixin Zhang (LA)

PS-W106-10, Table 1

See tangible productions of lesson plans, applicable to all levels, using computer multimedia platforms.

General, K-12. Community College. University/ College: Teachers, Postsecondary Educators



# NCURRENT SESSION

#### WED., 10 AW-12 NOON, CONT.

#### **WEB POSTERS**

All posters take place in Room 367W.

Professional Development to the Classroom: Foundations, Integration Institute, Administrator Academy

Kay Abernathy (TX), Jennifer Bergland. Linda Van Wagner. Susan Pennington. Joyce Logan. David Wallace, Ted Hasselbring

IPS-W107-10, Table 20

The Brazos-Sabine Connection, a consortium of 15 noncontiguous school districts in Texas with funding from the Technology Literacy Challenge Fund by way of the Texas Education Agency. is addressing the challenge of educator professional development.

Learning Pathways: Internet-Style Curriculum Collaboration Janet Arnett (TX), Karen Vander Moien (TX)

IPS-W108-10, Table 19

Learning Pathways is a Web resource for teachers, students, curriculum specialists. and instructional technologists. It merges Internet technology with a district curriculum to create communication. collaboration, and interactionenhancing activities.

K-12; Teachers, Coordinators

Touring the Oasis

Terrie Gray (CA). Susan Hess (NY). Kate Roberts (MS)

IPS-W109-10, Table 24

Need help finding what you're looking for online? Explore ED's Oasis, designed by teachers for teachers!

K-12; Teachers, Coordinators

Beyond Four Walls: Building an Elementary Classroom Web Site Micki Vicilie (PA)

IPS-W110-10, Table 18

Find out how a well-constructed classroom home page functions on multiple levels to support curriculum, facilitate communication, and enhance teamwork within a wider educational community.

General, K-12: Teachers, Coordinators

Online Learning with Amazon River Dolphins

Susan Reid (CA), Shelly Luke (CA). Tracy Anne Sena (CA)

IPS-W111-10, Table 15

Learn how three educators traveled to Peru and created the Amazon River Dolphin Web site. Find out how you can use this site in your classroom.

4-8; Teachers. Coordinators

Selena on the Move: Bridging Internet Learning Catherine Ritter (TX), Regina Woods (TX)

IPS-W112-10, Table 14

How do you integrate the Internet into your early childhood classroom? Presenters will discuss how. Learn about e-mail projects and how to implement a nationwide project.

K-3: Teachers

The Solution Site David Sentner (WV)

IPS-W113-10, Table 22

This presentation will address the content and method of development for a teachercreated Web site (www.thesolutionsite.com) containing K-12 thematic units integrating technology into three curriculum areas.

K-12: Teachers. Teacher Educators, Coordinators

High-Tech Service Learning: Joining School and Community Pam Van Walleghen (IL). Lura Hebert (IL).

Evangeline Pianfetti (IL)

IPS-W114-10, Table 23

Educators model technology-rich projects that move the nexus of learning from the classroom to the community and help students act as agents of positive change.

K-12. University/College: Teachers. Teacher Educators, Coordinators

**Technology Competencies** in Teacher Education:

An e-Showcase of Best Practices

Pam Wanga (MN), Barbara Ann Herrmann (MN). Jeanne Hites (MN), Bryan Miyagishima (MN). Tim Harms, Lee Gray, Jim Reineke

IPS-W116-10, Table 16

Join the Minnesota State Colleges and Universities team for an interactive Web showcase of best practices in Technology Competencies in Teacher Education (TCTE).

General: Teachers. Teacher Educators. Postsecondary Educators. Coordinators

WebQuests: Powerful, Safe Classroom Use of the Internet Maureen Yoder (MA), Angeline Ferris (MA)

IPS-W117-10, Table 17

Find out how WebQuests motivate both teachers and students and promote responsible use of the Internet.

K-12; Teachers. Teacher Educators, Courtinators

#### WEDNESDAY, 10:30-11:30

#### **SPOTLIGHTS**

• Life beyond Technology Audits: Turning Advice into Action

Christopher Moersch, National Business Education Alliance (OR)

W002

Technology use profiling in schools has become a major fad. But what effect is it having on classroom pedagogy? Learn

Room: Ballroom IV

specific strategies to transform advice into systemic action.

General, K-12: Teacher Educators, Postsecondary Educators, Coordinators

Finding the \$300 Billion and Writing Quality Proposals

Allen Schmieder, JDL Technologies. Inc. (MN)

Room: 157W Revealed: Secrets and wisdom gained from the review of more than 10,000 proposals. You'll learn to identify resources, develop a long-range funding strategy, and write the effective proposals you need to get the funding you want.

General, K-12; Teachers, Coordinators

Lights, Camera, Learning! What's New from Apple for Education

Tony Lee. Apple (CA)

W003a

Room: 160W Whether it's connecting schools to their

community with desktop movies or extending the reach of their network with Airport wireless networking, Apple is helping schools get the most from their investment in technology. This session will focus on the latest Apple tools, products, and solutions for education and provide compelling examples of their application in schools.

K-12, General: Coordinators

**BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

Capturing Digital Television's Power to Educate

Cari Ladd (VA). Sharon McNeil (GA)

W004

Room: 165W

The television in your classroom is changing: It is combining great video and online content to form a new kind of digital programming.

K-12: Teachers. Teacher Educators. Coordinators



#### **DISTANCE LEARNING**

Developing an Online Course Program: Things to Consider Wendy Burns (GA)

Room: 166W W005

You need to answer some basic questions before developing online K-12 courses. Explore those questions and answers and explain different models of online offerings.

K-12: Coordinators

Online Science Explorations from the American Museum of Natural History

Caroline Nobel (NY), Francine Miliman (NY)

W005a

Room: 161W

See an overview of innovative new technology projects that connect people of all ages to real science and real scientists.

General. K-12, Community College, University/ College; Teachers, Teacher Educators. Coordinators

#### CONNECTING **TECHNOLOGY TO TEACHING** AND LEARNING

#### **Technology Integration**

Using the Internet to Integrate the Arts with Other Disciplines Lynne Clement (DC)

Room: 264W

In this session, teachers will learn to integrate the arts across the curriculum through the creative application of technology. They will become familiar with the wealth of interdisciplinary, standardsbased resources on the Web sites of the Marco Polo partners. Teachers will also acquire skills necessary to find resources appropriate for planning multidisciplinary lessons.

K-12; Teachers, Teacher Educators

Computer Labs and Classroom Technology Working Together Barbara Migdalen (NJ), Betty Johnson (NJ)

W007 Room: 261W

There has been a move toward phasing out computer labs and placing all technology in the classrooms. Learn why we should maintain the K-8 computer lab as a viable curriculum-infused learning environment.

K-8; Teachers. Coordinators

#### World Languages

Change the Traditional High School World Language Classroom through Technology Robert Morrey (CA)

W008

Room: 267W

Create a dynamic and effective multilevel world language classroom through the use of technology and other resources.

9-12; Teachers, Teacher Educators, Coordinators

Facilitating Learning in Teams, Fostering Critical Thinking, Promoting Interdisciplinary Learning, and Empowering Students

**DSL Network News-**We're on the Right Track! Kris Drake (CA)

W009

Room: 260W

Room: 255W

Learn how students at a California elementary school became video stars while creating a current events show. Explore a strategy for integrating reading, writing, and research through video technology.

General, K-12; Teachers, Coordinators

#### Preschool and Elementary

Using Reality-Based Learning with Primary Students

Joyce Fitch (IL)

W010

Learn how primary students used technology to solve a problem for a community partner. Technology discussed includes cameras, charts, databases, spreadsheets, slideshows, and Web pages.

K-12; Teachers, Teacher Educators, Coordinators

#### Language Arts and Social Studies

Postcard Geography: A Crossroad for Technology and Geography Laurie Helkkila (OH). Leni Donlan (DC). Jan Carr (OH). Terri Garfinkei (OH)

Room: 254W Integrate your geography curriculum with

reading, writing, mathematics, and technology, including exchanging and designing postcards and collecting statistics about the United States and the world.

K-6; Teachers. Teacher Educators

Critical Thinking and Technology: Revolutionizing Vocabulary Acquisition

Ogden Morse (ME)

Room: 269W W012

Discover an entirely new approach to vocabulary acquisition and reading comprehension employing critical thinking and multimedia software to enhance student learning and teacher instruction.

Community College, 4–12; Teachers. Coordinators

#### Math and Science

Technology Makes Individualized **Basic Mathematics Possible** 

Rebecca Giles (AL), Matt Akin

W013

Room: 168W

Learn about technology-based, individualized instruction in basic mathematics. Computerized diagnostic tests and computerized learning systems individualize and instruct students who need a nonlecture learning format.

Community College, 6-12; Teachers, Teacher Educators, Postsecondary Educators,

NASA Math, Science, and Engineering Education Using Robotics Jeffrey Scaton (VA). John Evans

W015

Room: 256W

Find out how NASA Langley's Learning Technologies Project is enabling K-12 students to apply math, science, and computer technology skills to real-word problems through a variety of roboticsbased programs.

General, Teachers, Teacher Educators, Coordinators

#### Special Needs and Assistive Technology

Using Technology to Engage Students with Disabilities: A Teacher's Guide

Christy Johnston (NC)

W016

Room: 169W Technology can be accessible to every child in your classroom. Simple tips and tricks using personal computers, Macintosh™ OS. and Internet browsers help you become savvy in adaptive technology.

K-12: Teachers, Teacher Educators, Coordinators

#### Internet/Web

O Web Site Design Using a Systems Approach Michael Ruffini (PA)

Room: 364W W017

Designing a Web site? Get all the basic design principles you need to get started. Learn how to use a systems approach and ensure a comprehensive and quality site.

General. K-12. Community College, University/ College; Teachers, Teacher Educators, Postsecondary Educators. Coordinators

#### Multimedia

Video Jammin: Video Projects across the Curriculum Floyd Braid (GA)

Room: 257W

Discover how, with very little video equipment, teachers can help students create exciting and meaningful videos for classroom projects. See student poetry and journals make the leap to video.

General. K-12; Teachers. Coordinators



#### WED., 10:30-11:30 AM, CONT.

#### Multimedia, Continued

Creating Interactive Lessons with PowerPoint

Terence Cavanaugh (FL), Cathy Cavanaugh (FL)

W019

Room: 360W PowerPoint is highly effective for classroom presentations. Learn all the tricks, including navigation buttons. hyperlinks. Web links. multimedia elements, and Visual Basic for Applications.

General: Teachers, Teacher Educators. Postsecondary Educators, Coordinators

#### Support and Maintenance Help! Where Did My File Go?

Ann Harris (MD)

Room: 268W

Do your students or teachers have problems with computer files? Join us to discuss file management and see a demonstration of Teknimedia's exciting new multimedia training solution.

General. K-12, Community College, University/ College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### Research

SIGTE Presents: Annual Research Award on Technology in Teacher Education

Dale Niederhauser (UT), Marianne Handler (IL), with winners Kara Dawson. Aileen Nonis

Room: 158W

Hear the winners of this year's ISTE SIGTE Research Award on Technology in Teacher Education present leading-edge research on the role of technology in teacher education. Their paper is titled "Preservice Teachers' Experiences in a K-12/University Technology-Based Field Initiative: Benefits. Facilitators, Constraints, and Implications for Teacher Education. (Sponsored by ISTE's SIGTE)

General, University/College; Teachers, Teacher Educators, Postsecondary Educators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Organizational Structures That Support Teaching and Learning with Technology: Developing University and Statewide Leadership for Change

Steven Gilbert (DC). Nancy Cooley. Michelle Johnston. Susanne Chandler

W022

Room: 366W

Learn how to organize effectively to provide leadership for university-level and statewide initiatives focused on teaching and learning with technology.

General, University/College; Teacher Educators, Postsecondary Educators, Coordinators

#### Staff Development

Put the Right Tools in the Right Hands to Do the Right Things Larry McHaney (TX). Bryce Johnston (TX).

Carolyn Carroll (TX)

W023

Room: 361W

Technology is only a tool, but the right tool enables a skillful artisan to create a masterpiece. Lubbock ISD's system empowers teachers with the right tools for effective teaching.

K-12, University/College; Postsecondary Educators, Coordinators

#### Preservice and Graduate **Teacher Education**

Teacher Education and Technology at the Crossroads

Carolyn Cox (GA), Adele Ducharme (GA). Mimi McGahee (GA)

W024 Room: 156W

Teacher education reform through the infusion of technology produces a learnercentered, technology-empowered classroom that improves student achievement. See how a collaborative effort is used to build this new model.

Community College, University/College, 6-8; Teacher Educators, Coordinators

#### Assessment of Distance Learning Eric Knutsen (NY). Sandra Flank (NY)

W025

Room: 362W

A rationale and proposed scheme for evaluating the learning that results from technology infusion in teacher preparation distance learning classes will be presented.

Community College, University/College: Teacher Educators, Postsecondary Educators



STANDARDS, ASSESSMENT, AND **ACCOUNTABILITY:** STAYING CONNECTED

Training, Curriculum Standards, and Technology: Cooking Up a Great Recipe

Glenda Gunter (FL), Janie Phelps (FL)

W026 Room: 363W

Find out how to form a partnership blending curriculum standards, instructional strategies, and technology to improve teacher training and student achievement.

K-12, Community College, University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### MOVING BEYOND THE **CROSSROADS: TEACHERS AS** AGENTS OF CHANGE

O Students' Curriculum-Based Telecomputing as Teachers' Authentic Professional Development Judi Harris (TX), Lynda Abbott (TX). Courtney Glazer (TX)

W027

Room: 369W

What do teachers learn as they help their students learn? How can we document and amplify this "authentic professional development" by collaborating with other educators?

K-12; Teachers, Postsecondary Educators, Coordinators



CONNECTED **COMMUNITIES:** SCHOOLS, BUSINESSES, AND RESOURCES

It Takes a Village: Preparing **Technology-Proficient Teachers** through Partnerships

Mary Simeone (OR). Lois Cohen (OR). Dan Dunham (OR)

W028

Room: 368W

Join this discussion of a U.S. governmentfunded project uniting K-12 schools, hightech corporations, and higher education to create a technology-rich teacher preparation program in Portland, Oregon.

K-12, Community College, University/College; Teacher Educators, Coordinators

#### **WEDNESDAY, 11:45 AW-1:15 PM**

#### **LUNCHEON & KEYNOTE**

Connecting for Success

Betty Siegel, President, Kennesaw State University (GA)

W028a Room: Ballrooms I-III

Siegel will bring her remarkable sense of humor and perspectives on how we cope with change and the future to the NECC 2000 luncheon program. She has been instrumental in the inclusion of technology in the teacher preparation program in Georgia and is widely recognized for her vison and leadership. As Kennesaw State University President. Siegel is focused on the potential of technology to improve and affect education, specifically its effect on the university. She recently hired a Chief Information Officer to ensure that KSU is moving forward to meet the needs of its students and faculty.

\$25 ticket purchase is required.



#### WEDNESDAY, 12 NOON-1 PM

#### **SPOTLIGHTS**

Prairies, Pioneers, and Partnerships: Matching Standards, Resources, and Engaging Projects Annette Lamb, University of Southern Indiana (TX)

Room: Ballroom IV

Survive on the cyberprairie by aligning standards, selecting useful resources, and developing engaging, technology-rich projects. Find partners and build your own Little School on the Cyber-Prairie.

General, K-12; Teachers, Teacher Educators, Coordinators

#### The EarthPulse Center: Students Interacting with Their Changing World

Henry Olds, Logal.net/Riverdeep Interactive Learning (MA)

W030

Gain a new appreciation of how the Web can offer students learning experiences that directly support and extend curricular objectives, especially in math and science. See how students can use the Earth Pulse Center to explore and understand hurricanes.

General, K-12, Community College, University/ College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### **O** WebTech: A Professional **Development Program**

Traci Redish. Kennesaw State University (GA): Jerrie Cheek (GA); Michael Murray (GA)

Learn how WebTech is untangling the mysteries of the Web by providing practical hands-on training for teachers in the areas of research, communication, resources, online activities. Internet projects. and Web publishing.

General, K-12, University/College; Teachers. Teacher Educators. Coordinators

#### **BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

Giving Internet Instruction a Human Face: SMILe or HREF Tracks Matthew Nickerson (UT). Kathleen Webb (UT)

Room: 362W W032

Streaming video technology is transforming education. See how lectures are delivered digitally by a dynamite teacher in an online humanities course. It will blow you awayreally!

Community College. University/College, 9-12; Teachers. Curriculum Specialists. Postsecondary

The Changing Face of Education Dan O'Shea (FL)

W033 Room: 366W

Find out how Generation Y will use technology in the near future inside and outside the classroom and how universities can meet the next generation's needs.

General. K-12. Community College, University/ College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### **DISTANCE LEARNING**

Videoconferences in Learning Karl Seiler (MI), James Watkins (OH), Robert Fox (MI)

Room: 269W

Explore the challenges of implementing a fully integrated videoconferencing solution and discover how videoconferencing is transforming today's learning environment.

General; Teachers, Teacher Educators. Postsecondary Educators, Coordinators



Room: 160W

#### CONNECTING **TECHNOLOGY TO TEACHING** AND LEARNING

#### **World Languages**

Technology and the Modern Language Classroom

Maryanne Boettjer (PA)

W035 Room: 264W

Technology in the foreign-language classroom enhances students' knowledge of the world through opportunities to practice language skills. Sample projects, rubrics. templates, and student work are presented.

General, K-12; Teachers, Teacher Educators, Coordinators

#### **Project-Based Learning**

Connections along the Crossroads JoAnn Gadicke (WI), Shannon McCoy (OK)

W036 Room: 267W

Learn how two teachers came together to work on the ISTE/NETS writing team for technology standards and built student partnerships in interactive learning.

General, K-12; Teachers, Teacher Educators, Coordinators

#### Fostering Critical Thinking Learning Worlds Interacting with Technology

Emily Stewart (IL)

W037 Room: 260W

Technology is revolutionizing learning worlds. Learn how technology impacts the thinking tools of disciplines (e.g., the scientific process) and supports integrated and independent self-directed learning.

K-8; Teachers. Teacher Educators. Coordinators

#### Assessing Student Learning and Connecting to Standards and Assessment

How to Design Technology-Rich Lesson Plans in 15 Minutes or Less Steve Thompson (CA), Judith Stein (FL), Steve Thompson (CA)

W038

Room: 268W

Save significant time creating lesson plans that correlate to state standards and assessment tests by using iMind's state-ofthe art intranet and Internet technology. K-12: Teachers, Coordinators

#### Preschool and Elementary

O. K-2- What's Out There for You?

Gail Lovely (CA)

W039

Room: 166W Buckle up and get ready for a wild ride as you explore the best technological tools available for the youngest of learners. Computers belong beside tempera paintssee it for yourself.

K-3; Teachers, Teacher Educators, Coordinators

#### Language Arts and Social Studies

Civil War Perspective:

A Technology-Connected Lesson David Edgy (GA), Carol Grainger (GA), Kay Harrell (GA), Angela Morris (GA), Tami Murphy (GA), Jane Tomberlin (GA). Laurel Warren (GA)

Room: 165W

Through the example of a technologyconnected lesson on the Civil War, learn how to make technology work effectively in the classroom.

General, 4-12; Teachers, Coordinators

#### Overcome Fear of Writing: The "Write" Strategies and Tools

Joanne Nelson (CA)

Room: 255W

Help students of all ages overcome their fear of writing through the use of the computer. Read student-written papers developed under the program.

General. Community College. University/College. 4–12; Teachers, Postsecondary Educators. Coordinators

#### Math and Science

Discover the Environment Online

Shelbey Cooper (VA), Jana Jones

W042

Learn about a variety of Internet-based activities and resources for students and educators interested in bringing nature and conservation topics to the classroom.

Room: 161W

General. K-12: Teachers. Teacher Educators. Coordinators



#### WED., 12 NOON-1 PM, CONT.

Math and Science, Continued **Graphic Visualization** in Multivariable Calculus Using MATLAB'

Joshua Du (GA). Mariene Sims (GA). Kirk Shanks (GA)

W043

Room: 156W

Learn about a package of high-quality graphic illustrations designed to increase students' understanding of underlying mathematical concepts in calculus. Take the graphs back to your classroom for demonstration.

Community College, University/College, 9-12: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### Internet/Web

SIG/Tel's Online Learning Awards: **Project Presentations** 

Susan Silverman (NY), Betsy Frederick (NM)

W044

Room: 168W

Teachers in Grades K-16 will showcase successful projects and discuss how they organize their classroom curricula to maximize student opportunities to learn using telecommunication networks. (ISTE's SIG/Tel Society Session)

K-12; Teachers, Coordinators, Teacher Educators

#### Multimedia

Teacher Teams Create Desktop and Web-Based Courseware Gertrude (Trudy) Abramson (FL).

George Fornsheil (FL)

W045

Room: 364W

Examine team-created Web courseware. discuss the collaborative process, and learn how authentic experiences prepare teachers to mentor collaborative multimedia-based explorations with their students. (Sponsored by ISTE)

General, K-12; Teachers, Teacher Educators. Coordinators

Teaching through Technology Deviyanc Reynolds (AL)

W046

Room: 261W

See student-produced multimedia projects and portfolios where students have taken control of their learning as they research. outline, and design multimedia projects around curriculum topics. Hear about how Alabama's Monroe County raised \$25,000 to buy the equipment and how you can integrate free and low-cost software into your existing curriculum.

General, K-12; Teachers, Coordinators

#### Support and Maintenance

Tech Coordinator Secrets: Hot Links for All

Martha Savage (LA), Dusty Rowland (LA). Aimee Anthony (LA)

W047

Room: 257W

Ever wonder how your technology coordinator knows all the best Web sites? Join us, and we'll share our secrets.

K-8: Teachers. Coordinators

#### Evaluation

Improving Evaluations of Technology Integration and Distributed Learning

Sheila Cassidy (CA), Nancy Gadzuk Drexier. Cheryl Garnette

W048

Room: 254W

Learn strategies for improving evaluations of technology integration and distributed learning activities. Get recommendations for improving capacity, focus, conduct, and support for quality evaluations.

K-12, General, University/College; Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Captured Wisdom: **Adult Literacy Educators' Stories** of Integrating Technology Lynda Ginsburg (FL)

W049

Room: 169W

Watch adult literacy teachers and learners share innovative, replicable technology-rich activities and discuss how to fully use virtual classroom visits."

General, Community College; Teachers. Teacher Educators, Postsecondary Educators

#### Staff Development

Tear Down the Walls: Taking Teacher Training to New Heights

Toni Norris (SC). Robert Cole (SC). Lynn Nolan (SC)

W050

Room: 158W

With assistance from two federal grants. Greenville County Schools have initiated an innovative teacher training model to integrate technology with curriculum standards.

General, K-12, University/College; Teachers. Teacher Educators. Postsecondary Educators. Coordinators

Celebrating the Century: An Interdisciplinary Unit for Professional Development

Kendra Pamenter (IL), Siri Hartsfield (IL), Karen Thompson (IL). Sue Ruff (IL). Cindy Huson (IL)

Room: 361W Learn how development of a multimedia,

student-centered, interdisciplinary project about the 20th century engages adult learners participating in summer professional development.

K-12; Teachers, Coordinators

Pacific Algebra Network: Distance Learning for Teacher Professional Development Kavita Rao (HI). Barbara Dougherty (HI)

Room: 360W

Reaching teachers in a geographic area of 4.9 million square miles of ocean, the Pacific Algebra Network uses distance learning for teacher professional development in an innovative algebra teaching methodology.

General, K-12, Community College; Teachers, Teacher Educators, Coordinators



**0.0** Developing Assessment Strategies for Technology Integration: Three Diverse Case Studies

Abbie Brown (WA). Kah Heriong (NC). Thomas Caswell (NY), Timothy Noxel (Canada)

Room: 363W

Hear from three inservice educators about their success stories in assessing technology integration. Topics include the use of laptop computers in a private K-12 school. schoolwide integration of computers in a K-8 rural school, and an Internet-based discussion forum in a high-school social studies class.

General, K-12, University/College; Teachers, Teacher Educators, Coordinators



#### MOVING BEYOND THE **CROSSROADS: TEACHERS AS** AGENTS OF CHANGE

Innovation from the Source: A Professional Development Model Christina Devitt (NY), Tim Fiannery

Room: 369W

Learn about a professional development model that puts teachers and curriculum in charge of technological innovation by encouraging faculty to work collaboratively to create meaningful, technology-rich projects.

General, K-12, Community College, University/ College; Teachers, Teacher Educators, Postsecondary Educators



# NCURRENT\_SESSI



Teacher-Initiated, Museum-Based Curriculum Development: A Case Study

Craig Cunningham (IL). Julic Blue (IL). Micheile Warden (IL)

W055

Room: 368W

Imagine developing engaging Web-based curriculum with access to the resources of world-class museums. You can. Hear presenter experiences and future plans for this collaborative project.

General; Teachers, Coordinators

#### Social, Ethical, and Policy Issues

♠ Are You Guilty Of\_ ? Copyright Issues on the Internet Kimberly McCoy (OH)

W056

Room: 256W

Explore, in-depth, current copyright law. works covered, works not covered, fair use, and how copyright is applied to the Internet.

General. K-12. Community College, University/ College: Teachers. Teacher Educators. Coordinators

#### **WEDNESDAY, 1:30-2:30 PM**

#### **SPOTLIGHTS**

NASA Science-Here's to the Dreamers David Powe, NASA (MS)

W056a

Room: 160W

Here's to the dreamers, who help us see Beyond our blindness to what can be Imagination to see beyond the wall Here's to the dreamers, we need them all.

Dreamers is a dynamic past/present/future sensory experience. Enticing the senses through sight, sound and song, the Dreamers "live" presentation challenges and encourages participants to dream.

K-12: Teachers, Teacher Educators. Coordinators

## **BEYOND THE** CROSSROADS, WHERE DO WE GO FROM HERE?

There's Something about Movies: QuickTime® 4.0 Exposed Gerald Crisci, (NY), Ken Holvig (NY)

Room: 166W

Take two! Grab your director's chair and join us on a fascinating look at the latest classroom video editing technologies.

General. K-12; Teachers. Teacher Educators. Coordinators

#### Multipurpose Network Design and Implementation

Rick Hillman (NI)

W058

Room: 369W

Learn how to design and implement a data network that will serve multiple purposes in K-12 and community college classrooms. We will also present information on the delivery of voice and video.

K-12. Community College: Coordinators

#### DISTANCE LEARNING

Implementing Distance Education Programs in K-12 Schools: Opportunities and Challenges Joseph Scherrer (PA), Lynne Schrum (GA)

Learn about Germantown Academy's progress toward successful phased-in implementation of distance education programs (ITV and online) supporting both curricular enrichment and faculty. professional development.

K-12; Teachers. Coordinators

#### CONNECTING TECHNOLOGY TO TEACHING AND LEARNING

#### **Project-Based Learning** Ellis Island/Chicago: Breaking Ranks with the Teacher-Centered Classroom

Suzanne Hemminger (IL), Donna Castelli (IL). George Smith (IL), Wilma Williams (IL), Gail Tennial (IL), Kevin Waller (IL)

W060

Room: 264W

Break ranks with tradition by using technology to empower students as learners. Students can't embrace technology if their teachers won't, so find out how technology is changing the way veteran teachers teach.

6-12: Teachers. Teacher Educators. Coordinators

#### **Gender Equity**

Alternative Technology: How to Keep Adolescent Girls Interested in Technology

Marilyn Piper (WA), Craig Costello (WA)

Room: 267W

Find out how this 1999 Intel Innovations in Teaching Award-winning course is addressing the issue of gender imbalance in technology. Participating girls are learning technology skills using topics like women's self-defense, eating disorders, and career exploration.

General, K-12, Community College, University/ College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### **Empowering Students**

Seven Cybertrends in the Classroom That Will **Define Your Future** 

Viki Lawrence (BOP), Andrew King (New Zealand)

Room: 260W

E-business puts the world's information at one's fingertips. See how children can become savvy in the ways of e-business. General; Teachers

#### Assessing Student Learning and Connecting to Standards and Assessment

NETS for Students: Connecting Curriculum and Technology Peggy Kelly (CA). James Wiebe (CA). Joyce Friske (OK)

W063 Room: 261W

Hear the authoring teachers and the managing editor of the National Educational Technology Standards (NETS) Project describe how the document was developed, how it's being used, and why it is such an important resource. (Sponsored by ISTE)

K-12, University/College: Teachers, Teacher Educators, Coordinators

#### Laptops

Distributed Learning Environments: Mobile Laptop Labs

Jill Hobson (GA). Kim Head (GA)

W064

Room: 363W

Create a mobile computer lab that puts technology into the hands of students without tying up instructional space. Hear how Forsyth County School System has re-engineered the traditional computer lab. General; Teachers, Coordinators

#### Preschool and Elementary

International Multimedia Connections Enhance Young Children's Learning

Jacqueline K. Bowman (CT), June L. Wright (CT). James Strauss (CT), Pirjo Kantolo (Finland). Jarrko Lahtinen (Finland)

WA65

Room: 255W

See how integrating multimedia technology improves learning by looking at shared electronic books produced by children in Connecticut and Finland.

K-3; Teachers, Teacher Educators, Coordinators



#### WED., 1:30-2:30 PM, CONT.

Language Arts and Social Studies

Potent Partners: Poetry and Technology Sally Humble (NC)

W066 Room: 269W SAS inSchool's Visualizing Poetry product series offers a radical new approach to reading and writing instruction, using technology to bring poetry to life and stimulate every student. (Exhibitor presentation)

Community College, 6-12; Teachers. Teacher Educators, Postsecondary Educators,

The Trails Project: A Technology Innovation Challenge Grant Joyce Jennings (OR)

W067 Room: 157W History projects about the Oregon and Sante Fe trails provide a prime example of classroom technology incorporation. See examples of projects and learn what has worked and what has not

K-6; Teachers, Teacher Educators, Coordinators

Math and Science Enhancing the Teaching of Mathematics with Scientific Notebook

Jonathan Lewin (GA) W068

See how Scientific Notebook can revolutionize the teaching of mathematics. You'll even learn how to use the program as a "whiteboard" and then load your notes to your own Web site! This session is a great introduction for those without experience creating Web sites.

Room: 158W

Community College, University/College, 9–12; Teachers, Postsecondary Educators

Farragut Connected for Learning: Flexible Approaches with Science **Technology Tools** 

Nancy Witick (TN), Jane Skinner (TN)

W069 Room: 161W From AP to zoology, our science teachers and students find that a flexible arrangement of mobile computer carts provides versatility and variety when using technology tools.

6-12: Teachers

Computer Science

Practical Computing- A Survey **Computing Course** 

Scott Smith (GA)

W070 Room: 168W

Learn about a team-taught, project-based course encompassing word processing, spreadsheets, graphics, database development and use, multimedia, programming, and Web site design.

Community College, 6-12; Teachers, Teacher Educators, Coordinators

Special Needs and Assistive Technology

From Concrete to Abstract: **Developing Inquiring Learners** Carol Shields (TX)

W071 Room: 368W

View projects used with students in an atrisk program. Find out how the program gave students a better understanding of technology as a tool and the ability to demonstrate practical applications of mathematics in real life.

K-12: Teachers

#### Internet/Web

101 Ways to Use the Internet in Your Classroom

Corinne Burton (CA)

W072 Room: Ballroom IV Learn ways to maximize the effectiveness of the Internet in your elementary- or middle-

school classroom! Address general Internet integration, use of the Internet as a tool for demonstration and interaction, and Internet navigation.

K-8: Teachers. Teacher Educators, Coordinators

O.O. The "Ize" Have It: Creating Curriculum-Based Web Pages Keith Kyker (FL). Christopher Curchy (FL)

Room: 364W See your students' best efforts on the Web. Learn how to create a successful curriculumbased Web site with your students. Topics include software, planning, organization,

General, K-12, Community College, University/ College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### Multimedia

and common pitfalls.

Managing and Assessing the **Development of Multimedia Projects** Karen Ivers (CA), Ann Barron (FL), Elena Tinder (CA) W074 Room: 165W

Learn to manage the development and

assessment of multimedia projects. See rubrics, organization charts, and more.

K-12, Community College, University/College; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Rev It Up! Racing Across the Curriculum

Mark Rice (MS), Perry Reeves

Room: 360W

Learn about Racing Across the Curriculum. an effort that uses technology and racing as a teaching and learning tool. The project uses HyperStudio®, NASCAR 3, the Internet. laserdisc and DVD technology, and Photoshop<sup>®</sup> along with major racing teams.

K-12, University/College: Teachers. Teacher Educators, Postsecondary Educators

#### Support and Maintenance Top 10 Printer Troubleshooting Tips

Len Scrogan (CO)

Room: 257W

Ever feel like throwing your printer out the window? Find out the top 10 causes of printer frustration and how to solve them. Next time your school's printer malfunctions, you can be the one who knows how to fix it.

K-12: Teachers, Coordinators

#### Evaluation

Of Methods and Madness: Design Considerations for **Educational-Technology Evaluation** Kirk Vandersall (CA), David Quinn (IL) W077 Room: 254W

Review research design and methodological considerations for assessing the effect of educational technology on student achievement at the district level or higher.

General. K-12, Community College, University/ College; Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

Travel + Live Chats + Internet = Better Teaching in History and Social Studies

Ben Swecker (VA). Beverly Thurston (VA)

Room: 169W

WorldNet: Virginia allows teachers traveling in foreign countries to post journal entries and pictures to the Web and to participate in live chats. What better way to expose your students to the world's riches?

General, K-12. University/College; Teachers. Postsecondary Educators. Coordinators

#### Staff Development

no Teaching Teachers with Advanced Learning Technologies James Levin (IL). Ray Rose (MA). Linda Polin (CA).

Margaret Honey (NY), Sandy Levin (IL), Greg Waddoups (IL), Judi Fusco, Michael Waugh (CA)

Join this panel of experts as they discuss the process of developing and conducting online education for K-12 teachers. If you're interested in using new technologies for ongoing teacher learning and development, this session is for you.

General. K-12. University/College: Teachers. Teacher Educators. Postsecondary Educators.



#### Professional Development Online: High Quality and Highly Effective Chet Linton (UT)

W080

Room: 268W

Professional development online can be interactive, enjoyable, and rewarding. Discover some of the effective options and resources available on demand to educators through SchoolImprovment.Net.

General, K-12, Community College, University/ College, Teachers. Teacher Educators, Postsecondary Educators. Coordinators

#### Preservice and Graduate Teacher Education

**60** Transforming Teacher Education Elizabeth Holmes (GA), Polly Adams (GA)

Room: 156W W081

The Transforming Teacher Education (TTE) project partners three Georgia universities and 10 PK-12 partner schools to restructure teacher education programs using technology as a catalyst for change.

Community College, University/College: Teachers. Teacher Educators, Postsecondary



The Myth and Reality of Educational Technology in Botswana

Krishan Luli Kumar (Botswana). Tony Morrison (Botswana), Paul Nicya (Botswana)

Room: 366W

Realities of technology development in Southern Africa, specifically Botswana, will be explored, including the development of partnerships to achieve technology application and integration for global competitiveness.

University/College; Teacher Educators. Postsecondary Educators

#### Social, Ethical, and Policy Issues

Distance/Distributed Education's Role in Bridging the Digital Divide Nancy Gadzuk Drexier (MA). Shella Cassidy (CA). Cheryl Garnette (DC)

Room: 256W

See an overview, synthesis, and recommendations for strategies, resources, alliances, research, and evaluation for using distance/ distributed education to close the gap of the digital divide.

General, K-12, Community College, University/ College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

#### WEDNESDAY, 3-4 PM

#### **SPOTLIGHTS**

Lessons for the Millennium: From the Journals of Lewis and Clark Warren Buckleitner, Children's Software Revue (NJ) W084 Room: 160W

Using the Lewis and Clark expedition, this multimedia keynote address contrasts the excitement and uncertainty felt by our young country at the very dawn of the 1800s—with the excitement and uncertainty that technology offers for education today.

General; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Oo Using Satellite Delivery as a Bridge for the Digital Divide Janle Smith. Georgia Public Broadcasting (GA)

W085 Room: 157W

Participants will leave this session with a knowledge of how technology from the simple to the sophisticated is being used by PeachStar Educational Services, a Division of Georgia Public Broadcasting, in bridging the Digital Divide.

K-12, Community College, University/College: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

Learning in the Age of Creativity David Thornburg, Thornburg Center for Professional Development

Room: Ballroom IV

This presentation explores the emergence of technology-supported tools for creative exploration and problem solving that will provide learners with the skills they will need to thrive in the coming years. Sponsored by NetSchools Corporation. Includes a drawing for prizes.

General, K-12: Teachers, Teacher Educators, Postsecondary Educators, Coordinators

# **BEYOND THE** CROSSROADS, WHERE DO WE

Randy Gunter (FL). Glenda Gunter (FL)

W086 Room: 166W

Take a visionary and interactive tour of tomorrow's textbooks and how they will incorporate the World Wide Web. Today's exciting Web-enhanced textbooks will be highlighted.

General; Teachers, Teacher Educators, Postsecondary Educators, Coordinators "North Star Dreaming": **Presenting Student Dreams** for the Future

David Wagner (CA). Peter Reynolds (MA)

Fable Visionaries presents works of young filmmakers and expresses their visions of a

more positive world. View highlights from the first FableVisionary Film Festival.

K-12; Teachers, Coordinators

#### CONNECTING TECHNOLOGY TO TEACHING AND LEARNING

#### **Instructional Strategies** and Technology Integration

Technology, Learning, and Teaching: Lessons Learned Margaret Bingham (NC). Elizabeth Byrom (NC)

W088 Room: 261W

Hear lessons learned from providing technical assistance and professional development in instructional technology for schools and districts, and consider ways to apply those lessons to your own situation.

General; Teachers, Teacher Educators, Coordinators

#### Preschool and Elementary

O.O. "Pair-It": Pairing Literacy and Technology Jan Whelan (TX)

W091 Room: 255W Read the "Pair-It" way. By using both printed books and CD-ROMs, explore how K-3 reading comprehension is increased through activities pairing fiction and

K-3; Teachers, Teacher Educators, Coordinators

#### Language Arts and Social Studies

nonfiction sources.

Applying Technology-Connected Units to Achieve State Standards Lee Grafton (CA). Diane Kline (CA)

W092 Room: 256W Directors of technology and curriculum teamed up to enable teachers to design and deliver technology-connected units that meet the California Language Arts Standards. Training from Georgia's InTech Program combined with peer coaching resulted in technology-connected lessons

General, K-12; Teachers, Teacher Educators, Postsecondary Educators, Coordinators

American Frontiers: Using Laptops To Experience Multicultural History Lesile Nicodemus (FL), Lili Betancourt (FL)

W093 Room: 165W

History comes alive for students as they use laptop technology to understand the past. This student-centered multicultural project is applicable to all grades.

K-12: Teachers

that work.

GO FROM HERE? Tomorrow's Textbooks .. Today: A Glimpse into the Future



#### WEDNESDAY, 3-4 PM, CONT.

#### Math and Science

A Learning Community: Using Technology to Enhance Student Success

Bette Ambrose (MI), Julie Brown (IN). Martin Maguire (IL), Rob Osterman (MI), Mike Harmon (IN). MaryKay Marks (MI), Joellyn Ziclazinski (IL)

Room: 161W

Teachers from three states discuss projects developed through a U.S. Department of Education Technology Innovation Challenge Grant that use e-mail, the Internet, and teleconferencing to create materials designed to improve student learning.

6-12: Teachers

Integrating Assessment, Evaluation, Curriculum, and Instruction in the GenScope Genetics Learning Environment

Danlel Hickey (GA), Ann Kindfield (NJ). Paul Horwitz (MA), Mary Ann Christie (MA)

W095

Room: 168W

A four-year effort supported and documented dramatic learning gains in secondary genetics. We will demonstrate downloadable software and curricula and summarize our assessment system and results.

9-12: Teachers. Teacher Educators

Curriculum-Based Mathematics Software: Examples, Strategies, and Advantages

Michel Pitre (Canada), Vic D'Amico (Canada)

Room: 158W

High-school mathematics teachers have myriad software programs available to maximize their effectiveness in the classroom. Learn to make the most of today's technology-and free yourself to provide more individual assistance to students.

K-12: Teachers, Teacher Educators

What Is Simulation, and How Can It Make You Rich? Charies Shub (CO)

W097

**Room: 156W** 

Most educational software uses some form of simulation. Learn the basics of simulation, what it is, and how and why it is used. (Sponsored by the Society for Computer Simulation [SCS], International)

General. Community College, University/College, 9-12, Teachers, Teacher Educators, Postsecondary

Using Computer Manipulatives in Elementary Math Instruction Tammy Stephens (WI)

Room: 260W

Get the latest on current research results in addition to ready-to-use lesson plans and modeling of effective instructional techniques.

K-6; Teachers. Teacher Educators. Coordinators

#### Computer Science Cyber Careers for the Net

Generation Allen Parrish (AL), Peter Saffund (WA),

W099

Manjari Wijenaike (WA)

Room: 264W See the results of the Cyber Careers project, which is designed to provide information on IT careers to middle- and high-school students. (Sponsored by the IEEE Computer Society)

K-12. Community College, University/College; Teachers, Teacher Educators

#### Special Needs and Assistive Technology

oo Internet Textbooks: Helping Students Learn More! Mark Horney (OR), Lynne Anderson-Inman (OR). Carol Kennedy (NY)

Room: 369W Learn to evaluate digital textbooks. See examples of novels and history and science textbooks infused with resources to help at-risk students read and learn more!

6-12: Teachers, Teacher Educators. Coordinators

#### Internet/Web

Managing the Web Site

Leslie Fisher (CA)

W102 Room: 364W

Learn how to effectively organize your Web site, allow people to update the site without HTML, and make fast-loading Web pages. General, K-12, Community College, University/ College; Teacher Educators, Coordinators

Frankly, I'm Bored with the Future: Educational Leadership in Cyberspace

Gary Stager (CA)

W102a

Room: 169W Learn how to assess the role of the Internet in the intellectual and creative lives of children. How should schools respond sensitively to the expectations of high-tech kids?

General: Teachers, Teacher Educators, Coordinators

#### Multimedia

The Classroom of Tomorrow - Today Edward Benedict (WI)

Room: 257W

Learn how to design an effective multimedia classroom through examples of multimedia tests, student authored CDs, animation. charts and graphs, and teacher presentations on India, Japan, and China.

General: Teachers. Teacher Educators, Coordinators

Positively Pix-illating! Multimedia Creativity with Kid Pix\* Trisha Svaib (CA)

W104 Room: 269W Discover how to create effective multimedia

slideshows and reports quickly and easily with Kid Pix Studio 3rd Edition and Kid Pix Activity Kits.

K-6; Teachers, Teacher Educators, Coordinators

#### Funding, Planning, and Implementation

Writing a Solid Infrastucture **Bid Specification** Fred D'Andrea (RI)

W105

Room: 254W

Writing bid specs can be a drag. All too often, the product is a shopping list that favors the vendor, not the customer! There are better ways to stretch your dollars so you can maximize your connectivity, but you have to know "the art of the possible."

General; Coordinators



#### STAYING CONNECTED WITH PROFESSIONAL DEVELOPMENT

#### Staff Development

Needs- and Site-Based Professional Development: Inquiry and Technology Learning Catherine Price (GA). Brian Gerber (GA). Andrew Brovey (GA)

Room: 360W W106

Simulate and discuss sample successful teacher staff development projects, including discussion of unique features and key elements for effective future projects.

K-12, University/College; Teachers, Postsecondary Educators, Coordinators

Workshops That Work Ican Sindhikara (NI)

W107

Room: 361W

Discover a workshop format that entices teachers into future computer use by providing skills that enhance teaching in immediate and purposeful ways.

K-12; Teachers, Coordinators



# CONCURRENT\_SESSIONS

## Preservice and Graduate Teacher Education

Teaching Online:
Opportunities and Pitfalls

Jan La Forge (OH), Bonnie Mathies

W108

Room: 362W

Find out about the interactive nature of online teaching and practical methods for overcoming the problems and challenges in putting a professional graduate degree program online.

University/College; Postsecondary Educators. Coordinators



# STANDARDS, ASSESSMENT, AND ACCOUNTABILITY: STAYING CONNECTED

K- 12 Educational Technology Update Jeanne Hayes (CO)

W109

Room: 368W

Get to the heart of educators' real use of technology through QED's annual survey results relating directly to technology use in the classroom. Also find out how your state or district fares on purchasing plans. technology budgets and per-pupil expenditures. (Exhibitor presentation)

K-12: Teachers. Coordinators

Teachers Communicating for Success: nschool.com Shows Schools the Free Way!

Lynne Schrum (GA)

W112

Learn about a free product to create communications among teachers, parents, and students. nschool.com offers educational resources, lesson plan development, shared calendars, and full e-mail.

Room: 361W

K-12: Teachers, Coordinators

#### WEDNESDAY, 4:15-5 PM

# CLOSING GIVEAWAYS & NECC 2001 "BUILDING ON THE FUTURE" PREVIEW

GWCC, Hall G

Join us for a preview of Chicago's NECC 2001: Building on the Future, and for a drawing of special prizes including hardware, software, and an airfare/registration package for NECC 2001! Must be present and have photo ID to win.



The Birth of a Distance Education Consortium Chuck Chulvick (NJ)

W110

Room: 268W

The session provides a description of how the New Jersey Virtual Community College Consortium was founded and how it is now operating in its first full year of operation. (Sponsored by SIGUCCS)

General. Community College, University/College: Postsecondary Educators. Coordinators

Project VBUGS:

Teaching Visual Basic Internationally Anthony Malone (OH), Jean Pryce

W111

Room: 366W

This session will describe in detail the necessary steps to successfully market and deliver an existing technology training course abroad in a global initiative.

General, Community College, University/College; Teachers, Postsecondary Educators, Coordinators REGISTRATION
FOR NECC 2001 IS ALREADY
AVAILABLE AT ...
WWW.NECCSITE.ORG

FUTURE NECCS NECC 2001 Chicago, IL McCormick Place June 25-27, 2001

Hosted by Illinois Computing Educators (ICE) and Northwestern University

NECC 2002 San Antonio, TX San Antonio Convention Center June 17-19, 2002

Hosted by the National Educational Computing Association (NECA), Inc.



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W = Wednesday

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SAA = Saturday AM
SAP = Saturday PM
SAE = Saturday Full-d

SAF = Saturday Full-day MA = Monday AM MP = Monday PM SUA = Sunday AM SUP = Sunday PM

SUF = Sunday Full-day
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WELCOME TO NECC 2000

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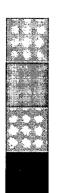
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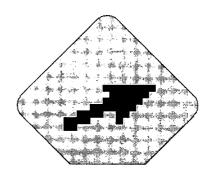
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Monday, 9:45 am-5:30 pm

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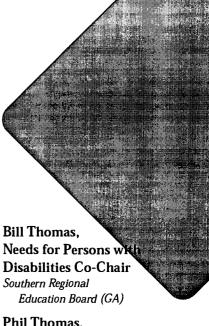
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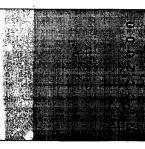
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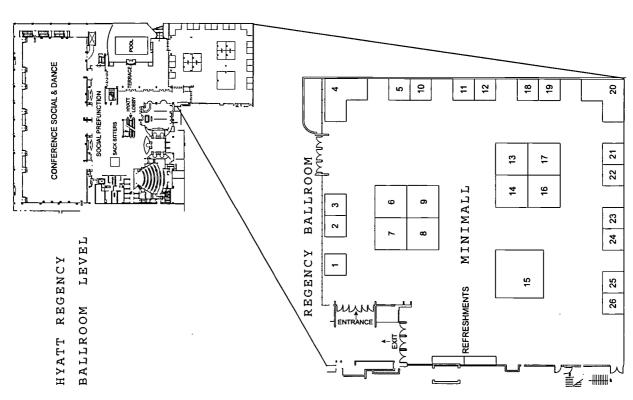
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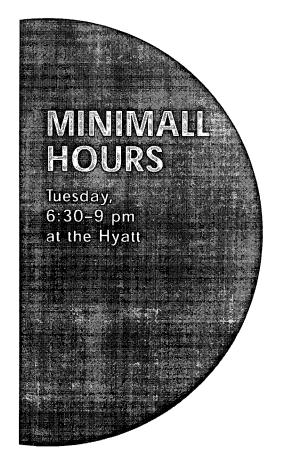
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Plan your road trip	around the Exhibi	it Hall—who sh	ould you visit fi	rst?	
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Cable in the Classroom       .2362,2364         eBoard.com       .2370         Macromedia, Inc.       .2400,2401         Encore Software, Inc.       .2402         Aurbach & Associates, Inc.       .2420         AT&T Learning Network       .2422,2424         Sharp Electronics Corp./ICD Products Group       .2425,2427         Boxer Learning, Inc.       .2426,2428	Educational & Business Systems, Inc. Leading Technology Micro, Inc. Animated Communications SCI Technologies Long's Electronics Inc. College Broadband ELLIS by CALI, Inc.

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Booth Number(s)

uuity Works, Inc./Corel Corporation ....................2448

News & World Report ......2456  . . . . . . . . 2469

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nnica Education ......2455,2457

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Exhibitor Name	Booth Number(s)	EX
ePALS Classroom Exchange		An
Phoenix/BfA/Coronet	2602,2700	tex
AlphaSmart, Inc.	2620	iTe
SIRS Mandarin, Inc.		Ŧ
The Knowledge Tree Inc.	2623.2625	Sor
NewDeal Inc	2626 2628	Ma
ANTEC/Educational Jackhoology Associates 8.	2627,555	ואם
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Neureid Learning Systems		Ac
Eiki International	2630,2632	Ab
Grafco, Inc.	2637,2736	Hic
Learn.com		, Bar
NewsBank Inc	2639 2641	X X
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Source Technologies, Inc.		ة د
Book Systems, Inc		ਨੁੱ
American Education Corporation	2643,2645	Po
The FundingFactory	2644,2646	Vis
K'NEX Education Division	2648,2650	The
Schepp Turner Productions LLP	2654	Test
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Walden University	2664	Ala
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New Forum Publishers, Inc.		ž
WIN Laboratories, Ltd		ઇ ઇ
eHomeRoom.com, Inc.		6
Learning in Motion	2720,2722	Ē
Fortres Grand Corporation		Fea
Pinnacle Systems, Inc.		Visi
National Semiconductor Corporation	2728,2730	U.S
Teknimedia Corporation		Fea
Surpass Software		Sch
American Power Conversion		Fod
PLATO* Education/TRO Learning, Inc.	2743,2745	Pro
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QuickPAD by H45 Technology, Inc.	2749.2751	For
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Adventus Incorporated	2758	)
The Keyboard Instructor by AKT Inc	2761	
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Learning Pays.com	70/7	

Exhibitor Warne Booth Numr	Number(s)
Amer.com	.2763
textHELP Systems Ltd	.2765
ileach.com	.2768
Hyper Technologies	.2769
Sonic Desktop Software	.2770
oup	,2822
PAR Technologies, Inc	,2823
Corporation	.2824
AbleSoft, Inc	,2827
Highsmith, Inc	,2831
Barnum Software	.2833
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Kurzweil Education Group	.2860
ge Systems	,2863
media	.2862
	.2864
ishing Group	.2868
	.2869
nc	.2870
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Teacher Education.com - Teacher Education Institute	.2924
Vista Associates, Inc.	.2926
urvey	.2928
e, Inc	,2932
SchoolOne.com	.2936
Logic Extension Resources	.2938
Proxima Corporation	.2940
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Funds for Learning	.2944
Phoenix Multimedia, Inc.	.2946
s-Down Hill Publishing	.2948
DataServ, Inc.	.2950

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### NECC200

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# COMMUNICATION SOLUTIONS

ADVANCE AUGMENTATIVE

# Jyna Vox Systems Inc.

Aurbach & Associates, Inc. **ASSESSMENT** 

# ASSESSMENT AND CURRICULUM

.ogic Extension Resources

eacher Universe, Inc.

INTEGRATION

#### ASSOCIATION

STE—International Society for Technology in Education **National School Boards Association** Nippon Educational Computing Association

WCCE 2001 (World Conference on Society for Computer Simulation International

# AUDIO/VISUAL PRODUCTS

Computers in Education)

ong's Electronics Inc.

#### **SUSINESS SOFTWARE** Academic Software

Ask Jeeves/The Evergreen Project **Diskovery Educational Systems** Educational Software Institute Animated Communications ELLIS by CALI, Inc.

onts4Teachers-Down Hill Publishing MediaSpark IT Solutions Inc. Microsoft Corporation earning Services, Inc.

PowerQuest Corporation Phoenix Multimedia, Inc. Principia Products, Inc. ower On Software

Security Software Systems, Inc. Sonic Desktop Software Software Express, Inc. Sorenson Vision, Inc.

Sun Microsystems, Inc.

Quick Course Books/OTSI

CALCULATORS

**Texas Instruments Incorporated** 

### CD-ROM PUBLISHER

Adventus Incorporated ABC-CLIO

AIMS Multimedia

Ask Jeeves/The Evergreen Project Barnum Software

Boxer Learning, Inc.

Britannica Education College Broadband

Compu-Teach Educational Software Cubic Science, Inc.

Curriculum Associates, Inc. **DDC Publishing** 

Fairfield Language Technologies Get a Clue Software & Services Discovery Channel School DK Interactive Learning orest Technologies

GPN/University of Nebraska-Lincoln (Lyceum Communications) Grolier Educational

DE Corp.—Innovative Designs Ingenuity Works, Inc./ for Education Heartsoft

K-12 MicroMedia Publishing Corel Corporation Learning in Motion

Lexia Learning Systems, Inc. MICRO-INTEL International intor Publishing Center Micrograms Software MathResources Inc. ightspan, Inc.

National Geographic School Phoenix Multimedia, Inc. Milliken Publishing Co. Publishing

Riverdeep Interactive Learning Rainbow Educational Media Quick Course Books/OTSI SIRS Mandarin, Inc. Scholastic Inc.

COLLABORATIVE TOOLS

# COMPUTER ASSISTED INSTRUCTION

Centrinity

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COMPUTER FURNITURE/FURNITURE Electronic Classroom Furniture

Micro Warehouse, Inc.

N2H2, Inc.

Spectrum Industries, Inc. Virco Mfg. Corporation Nova Solutions, Inc. SMART desks Ltd. Systems, L.C. Highsmith, Inc. Smith System Grafco, Inc.

# COMPUTER INTERFACE

SCI Technologies

Proxim, Inc.

SCI Technologies

### COMPUTER NETWORKS: HARDWARE Acer America Corporation

Bell Atlantic Amer.com

BellSouth SDW•G

**Brother International Corporation** Cisco Systems, Inc.

Data Recognition, Inc. Daly Computers DataServ, Inc.

Computrac

DreamWriter—NTS Computers Diskovery Educational Systems

**Dukane Corporation** 

EarthWalk Communications, Inc. Education Networks of America Fiberworks, Inc. Gateway U.S.News & World Report **TeachMaster Technologies** Tom Snyder Productions eknimedia Corporation SUNBURST Technology furner Learning, Inc. **Tyndal Stone Media** ech4Learning, Inc. The Gale Group Steck-Vaughn

Educational & Business Systems, Inc. Hewlett-Packard Company Ericsson Web Com, Inc. **Enterasys Networks** orest Technologies GCC Technologies **BM** Corporation

riteractive Products Division—Numonics DL Technologies ntel Corp.

eading Technology Micro, Inc. ogical Choice Technologies ucent Technologies ungsoft USA, Inc.

Vetwork Data Services, Inc. **NetSchools Corporation Nortel Networks** 

Philips Consumer Electronics PAR Technologies, Inc. remio Computer, Inc. **NoteSys** 

Symbol Technologies, Inc. Sonnet Technologies, Inc. angent Computer, Inc. Sun Microsystems, Inc. SIRS Mandarin, Inc.

Waters Network Systems oshiba America echLAN

Cenith Electronics Corporation WIN Laboratories, Ltd.

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COMPUTER NETWORKS: SOFTWARE Net Academic Distributing, Inc.

Academic Software

Sarnum Software

CrossTec Corporation

Curriculum Associates, Inc. Daly Computers Data Recognition, Inc. DataServ, Inc.
Diskovery Educational Systems
OK Interactive Learning

DreamWriter—NTS Computers arthWalk Communications, Inc. ILLS by CALI, Inc. interasys Networks cricsson Web Com, Inc.

Interasys Networks
Ericsson Web Com, Inc.
Excelsior Software, Inc.
Bairfield Language Technologies
Fiberworks, Inc.

airfield Language Technolog iberworks, Inc. orest Technologies ortres Grand Corporation

Sateway

Get a Clue Software & Services (Lyceum Communications)
BM Corporation
DE Corp.—Innovative Designs

for Education
mind education systems
nspiration Software, Inc.

Intel Corp.
JDL Technologies
K'NEX Education Division
K-12 MicroMedia Publishing
LearnStar, L.P

EXHIBITOR PRODUCT CLASSIFICATION

Lexia Learning Systems, Inc. Lightspan, Inc. Lintor Publishing Center Logical Choice Technologies MathXpert

MediaSmith, Inc. Micro Warehouse, Inc. Microsoft Corporation

**VECTAR Foundation** 

NetSchools Corporation
NetSupport
Nordex International
NoteSys
Novell, Inc.
Pasco Scientific
Phoenix Multimedia, Inc.
Power On Software
Power Quest Corporation
Principia Products, Inc.
Quick Course® Books/OTSI
Riverdeep Interactive Learning

Sagebrush Corporation
Schepp Turner Productions LIP
SCI Technologies
Software Express, Inc.
Symantec Corporation
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textHEIP Systems Ltd.
Than Savider Productions

Vernier Software & Technology Winnebago Spectrum/Athena COMPUTER PERIPHERALS

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Acer America Corporation
Adventus Incorporated
AlphaSmart, Inc.
Amera Computers, Inc.
American Power Conversion
ANTEC/Educational Technology

American Power Conversion ANTEC/Educational Technology Associates & Neufeld Learning Systems

Brother International Corporation CalcuScribe Canon USA Visual Communication

Systems
CDW•G
ClassroomDirect.com
CompUSA Inc.
Computrac
Daly Computers

Data Recognition, Inc. Diskovery Educational Systems EarthWalk Communications, Inc. Ericsson Web Com, Inc.

OCUS Enhancements, Inc.

Forest Technologies
Gateway
GCC Technologies
Geist Manufacturing, Inc.
Hewlett-Packard Company
IBM Corporation
Interactive Products Division—

Numonics Jungsoft USA, Inc. Keytec, Inc. Leading Technology Micro, Learning Services, Inc.

Leading Technology Micro, Inc.
Learning Services, Inc.
Lexmark International

Lexmark International
LittleFingers by Datadesk
Logical Choice Technologies
Micro Warehouse, Inc.

Mictor Wateriouse, inc. Network Data Services, Inc. PAR Technologies, Inc. Philips Consumer Electronics

Philips Consumer Electronics Pinnacle Systems, Inc. Polaroid Education Program

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QuickPAD by H45 Technology, Inc. Sagebrush Corporation SchoolComputer.com SCI Technologies SMART Technologies Inc.

Sorenson Vision, Inc.
Sun Microsystems, Inc.
Symbol Technologies, Inc.
Tangent Computer, Inc.
Terranin Software

Software Express, Inc.

rangem Computer, inc.
Terrapin Software
Virtual Ink Corp.
Welsh Products, Inc.
WIN Laboratories, Ltd.

WIN Laboratories, Ltd.
Winnebago Spectrum/Athena
Zenith Electronics Corporation

COMPUTER SERVICE PARTS
Pre-Owned Electronics, Inc.

COMPUTER SUPPLIES
WorldWise Computer Supplies & Accessories

COMPUTER SYSTEMS

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Book Systems, Inc. Brother International Corporation CalcuScribe

CDW•G CompUSA Inc. Daly Computers Data Recognition, Inc. DataServ, Inc.
Dell Computer Corporation
EarthWalk Communications, Inc.
Enterasys Networks

Gateway Hewlett-Packard Company Howard Computers

IBM Corporation
Leading Technology Micro, Inc.
LearnStar, L.P
Logical Choice Technologies
Micro Warehouse, Inc.

Micron Government Computer Systems, Inc. Network Data Services, Inc.

NoteSys
PAR Technologies, Inc.
Perfect Solutions
Pre-Owned Electronics, Inc.
Premio Computer, Inc.

Premio Computer, Inc.
SCI Technologies
Sun Microsystems, Inc.
Tangent Computer, Inc.
Toshiba America
WIN Laboratories, Ltd.

COMPUTER TELEPHONY
PhoneMaster—a Division of
US Telecom

COMPUTER-BASED TRAINING Teknimedia Corporation

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Winnebago Spectrum/Athena

Vista Associates, Inc.

Phoenix/BFA/Coronet DVD, CD-ROM, VIDEO

Pepperdine University EDUCATION

**National School Boards Association** 

Seorgia Educational Technology

BSCO Publishing

CONFERENCES

Conference (GaETC)

**EDUCATION PUBLICATIONS** 

Media & Methods Magazine

Acer America Corporation **EDUCATION SOLUTIONS** 

WCCE 2001 (World Conference on

Computers in Education)

CONSULTING SERVICES

Co-NECT Schools

Society for Computer Simulation

International

**SCI Technologies** 

**EDUCATIONAL CURRICULUM PROGRAMS** USA TODAY

**EDUCATIONAL MEDIA DISTRIBUTOR** Library Video Company

DE Corp.—Innovative Designs

Funds for Learning

**EDUCATIONAL PRODUCTS** 

**CURRICULUM CONTENT ONLINE** 

FeachMaster Technologies

for Education

New Forum Publishers, Inc.

Quality Education Data

DATABASE MARKETING

Quality Education Data

DESIGN SERVICES SMARTdesks Ltd.

DATABASE SERVICES

**EDUCATIONAL RESOURCES** Cable in the Classroom Pitsco LEGO Dacta

ePALS Classroom Exchange **EDUCATIONAL SITE** 

Alexandria/COMPanion Corporation AccuNet<sup>TM</sup>/AP® Photo Archive Academic Distributing, Inc. **EDUCATIONAL SOFTWARE: ADMINISTRATIVE** AbleSoft, Inc.

DIGITAL IMAGING PRODUCTS

Sony Electronics, Inc.

American Education Corporation Blackboard, Inc.

feacherEducation.com-Teacher

**Education Institute** 

op Tutors.com

Canter & Associates, Inc.

DISTANCE LEARNING

Chancery Software Ltd. ClassroomDirect.com Boxer Learning, Inc. CCV Software

Computer Curriculum Corporation Diskovery Educational Systems **Dukane Corporation** Daly Computers EDmin.com

GRADUATE EDUCATION

**Nalden University** 

AIMS Multimedia

DISTANCE LEARNING:

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DE Corp.—Innovative Designs K-12 MicroMedia Publishing earning Tools International Follett Software Company ogic Extension Resources nspiration Software, Inc. Learning Services, Inc. lay Klein Productions orest Technologies Learning in Motion Funds for Learning Jackson Software BM Corporation FSCreations, Inc. for Education

ogical Choice Technologies PhoneMaster—a Division of Meridian Creative Group Phoenix Multimedia, Inc. Micro Warehouse, Inc. Nordex International NetSupport **MSCS** 

Regional Technology in Principia Products, Inc. Power On Software US Telecom PowerSchool

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Casio, Inc.

South Central Regional Technology Schepp Turner Productions LLP in Education Consortium Education Consortium Sagebrush Corporation Sun Microsystems, Inc. Software Express, Inc. SchoolComputer.com Surpass Software

Feacher Created Materials, Inc. Virtual Learning Technologies FeachMaster Technologies Symbol Technologies, Inc. teachersroom.com, Inc. **TechLAN** 

Advantage Learning Systems, Inc. AccuNet<sup>TM</sup>/AP® Photo Archive Academic Distributing, Inc. EDUCATIONAL SOFTWARE: Adventus Incorporated A-ha! Interactive, Inc. Academic Software AIMS Multimedia INSTRUCTIONAL

American Education Corporation ANTEC/Educational Technology Animated Communications Associates & Neufeld

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Aurbach & Associates, Inc. Boxer Learning, Inc. Barnum Software Bytes of Learning Blackboard, Inc. Brainium.com

Classroom Connect, Inc. Cognitive Concepts, Inc. ClassroomDirect.com College Broadband CompassLearning Centrinity

Compu-Teach Educational Software Computer Curriculum Corporation CrossTec Corporation Subic Science, Inc.

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DISTANCE LEARNING SERVICES

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# INSTRUCTIONAL (CONTINUED)

DUCATIONAL SOFTWARE:

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intrex Software

airfield Language Technologies Ericsson Web Com, Inc.

Get a Clue Software & Services Samco/Orchard Software orest Technologies

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DE Corp.—Innovative Designs **Grolier Educational BM** Corporation **Jeartsoft** 

mind education systems ngenuity Works, Inc./ for Education

nspiration Software, Inc. Corel Corporation ntelliToots, Inc.

K-12 MicroMedia Publishing **K'NEX Education Division** (ey Curriculum Press

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Main Xchange, Inc. MathResources Inc. Math.com

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he Princeton Review Online The LearningStation.com om Snyder Productions urner Learning, Inc. The Wright Group lop Tutors.com hinkQuest

he Keyboard Instructor by AKT Inc. **INSTRUCTIONAL TRAINING AND** INSTRUCTIONAL HARDWARE **DEVELOPMENT SERVICES** Bell Atlantic Yamaha Corporation of America Vernier Software & Technology Winnebago Spectrum/Athena Virtual Learning Technologies U.S.News & World Report

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EDUCATIONAL TECHNOLOGY

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**ELECTRONIC LEARNING AID** 

nteractive Products Division—Numonics NTERACTIVE WHITEBOARDS SMART Technologies Inc.

NTERNET PRODUCTS/SERVICES **Dukane Corporation** NTERCOM

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SMARTer Kids Foundation

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The FundingFactory

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U.S. Geological Survey **GOVERNMENT SERVICES** 

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National Science Foundation

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Centurion Technologies, Inc.

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GRAPHIC DESIGN

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EarthWalk Communications, Inc. e-Tutor, Inc.

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yndal Stone Media

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### Micro Warehouse, Inc. Microsoft Corporation NTERNET PRODUCTS/SERVICES

NASA Education Program National Geographic Educational Software Institute

**EBSCO Publishing** 

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Board.com

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School Publishing

New Forum Publishers, Inc. NetSchools Corporation **NECTAR Foundation** NewDeal, Inc.

PALS Classroom Exchange

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PLATO\* Education/TRO Learning, Inc. Phoenix/BFA/Coronet

**3PN/University of Nebraska-Lincoln** 

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amilyEducation Network

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Riverdeep Interactive Learning **Education Consortium** Regional Technology in Sagebrush Corporation

DE Corp.—Innovative Designs

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HighWired.com

mind education systems

for Education

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**NET Library** 

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nternet Products, Inc.

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Security Software Systems, Inc. School Improvement.Net SCI Technologies SchoolOne.com

Sonic Desktop Software Software Express, Inc. Sorenson Vision, Inc. SmartStuff Software SIRS Mandarin, Inc.

South Central Regional Technology in Feacher Created Materials, Inc. **Education Consortium** teachersroom.com, Inc. Sun Microsystems, Inc. Symantec Corporation

earning Tools International

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ogical Choice Technologies

Main Xchange, Inc.

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intor Publishing Center

ightspan, Inc. earnStar, L.P

om Snyder Productions **ThinkQuest** 

Virtual Learning Technologies U.S.News & World Report furner Learning, Inc. Virtual Ink Corp. op lutors.com

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Youthline USA

ZapMe! Corporation IT SOLUTIONS

Fiberworks, Inc.

LAN/WAN INTEGRATION SERVICES Bell Atlantic

DreamWriter—NTS Computers LAPTOP COMPUTERS

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Follett Software Company SIRS Mandarin, Inc. Book Systems, Inc. Surpass Software

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Market Data Retrieval MANAGED INTERNET

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CompUSA Inc. MEDIA

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The Heartland Institute MONTHLY NEWSPAPER School Reform NewsPioneer New Media Technologies, Inc. MULTIMEDIA AUTHORING SOFTWARE MediaSmith, Inc.

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MUSIC EDUCATION HARDWARE MULTIMEDIA PROCESSING MediaSmith, Inc.

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**NETWORK MANAGEMENT SYSTEM DMR, ASSESSMENT SOFTWARE** Principia Products, Inc. MSCS

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**ONE-TO-ONE ONLINE TUTORING** opTutors.com

Nova Southeastern University, SCIS ONLINE COMPUTER-RELATED **DEGREE PROGRAMS** 

PC TO TV SCAN CONVERTERS FOCUS Enhancements, Inc. Vision Database Systems HOTO ID SYSTEM

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eading Technology Micro, Inc.

K-12 MicroMedia Publishing

IDL Technologies

Teach.com

N E C C 2 0 0

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W W W. N E C C S I T E . O R G

# ORTABLE WORD PROCESSOR

**SalcuScribe** 

PRINTING SUPPLIES :hINK4inc.com PROFESSIONAL DEVELOPMENT AT&T Learning Network

UTUREKIDS, Inc. (nowvation, Inc.

School Improvement.Net

#### PROFESSIONAL DEVELOPMENT TRAINING

DE Corp.—Innovative Designs for Education

#### PROGRAMMING LANGUAGES Academic Distributing, Inc.

**Diskovery Educational Systems** Educational Software Institute **DDC Publishing** 

K'NEX Education Division

Sun Microsystems, Inc. Software Express, Inc. VewDeat, Inc.

# PROJECTION DEVICES

**Terrapin Software** 

ANTEC/Educational Technology Associates & Neufeld **Boxlight Corporation** Learning Systems Canon USA Visual

Communication Systems Daly Computers **CCV Software** CompUSA Inc.

EarthWalk Communications, Inc. Diskovery Educational Systems nteractive Products Division— Data Projections, Inc. **Dukane Corporation** 

ong's Electronics Inc. Numonics **IGHTWARE** 

Philips Consumer Electronics Proxima Corporation SchoolComputer.com

Zenith Electronics Corporation SMART Technologies Inc. WIN Laboratories, Ltd.

#### PUBLISHER

lungsoft USA, Inc.

PROTECTION

American Education Corporation Adventus Incorporated

Ask Jeeves/The Evergreen Project

**Britannica Education Bytes of Learning** 

Barnum Software

Canter & Associates, Inc.

Computer Learning Foundation Children's Software Press

Curriculum Administrator Magazine Computer Literacy Press, Inc. Cubic Science, Inc.

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K-12 MicroMedia Publishing K'NEX Education Division Ingenuity Works, Inc./ Corel Corporation

**Key Curriculum Press** -awrenceville Press earn.com S

intor Publishing Center earning in Motion ightspan, Inc. Math.com

MediaSmith, Inc.

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Simulation International Society for Computer Steck-Vaughn

Feacher Created Materials, Inc. Fech4Learning, Inc. I.H.E. Journal

The Bureau for At-Risk Youth **Terrapin Software** The Gale Group

U.S.News & World Report **Tom Snyder Productions** furner Learning, Inc The Wright Group

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Principia Products, Inc. SCANNING SOFTWARE

COMMUNICATION TOOLS SCHOOL-TO-HOME SchoolOne.com

SECURITY DEVICES: COMPUTERS SecurTech Company & A/V EQUIPMENT

Fortres Grand Corporation SECURITY SOFTWARE SmartStuff Software

SPECIAL EDUCATION

SPECIAL EDUCATION NEEDS extHELP Systems Ltd. Perfect Solutions ntelliTools, Inc.

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TRAINING SOLUTIONS

Bell Atlantic

he Princeton Review Online STATE ASSESSMENT

Schepp Turner Productions LLP *IEACHER TRAINING* **TEACHER TOOLS** 

**TEACHER TRAINING WORKSHOPS:** National Wildlife Federation ONLINE AND REGIONAL

Knowvation, Inc.

*IECHNICAL SERVICES* CompUSA Inc.

Rauland-Borg Corporation K'NEX Education Division *TELECOMMUNICATIONS* Fiberworks, Inc.

Virtual Learning Technologies **TESTING & ASSESSMENT TEST PREPARATION Test University** 

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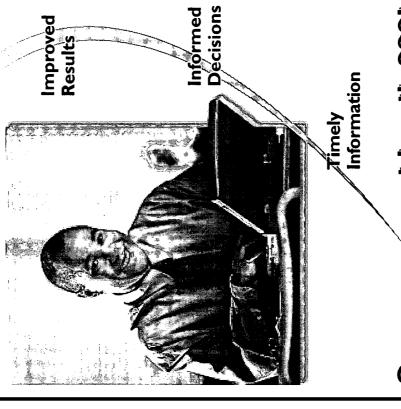
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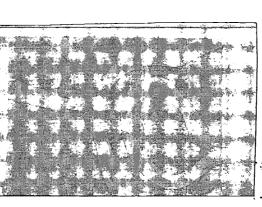


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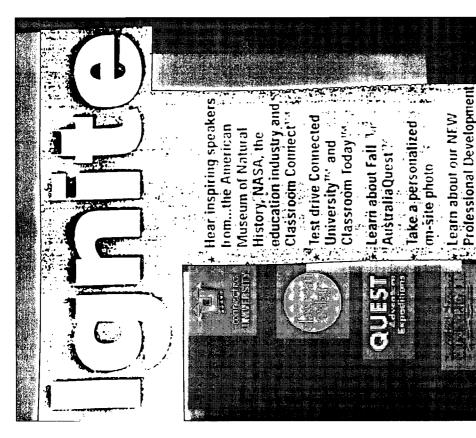
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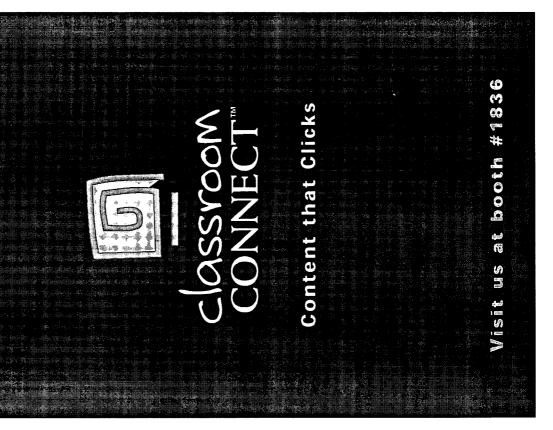
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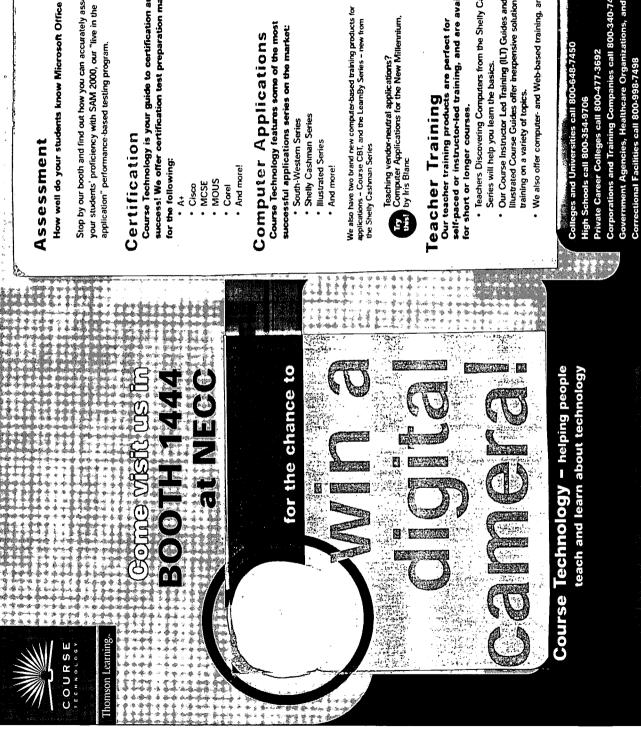
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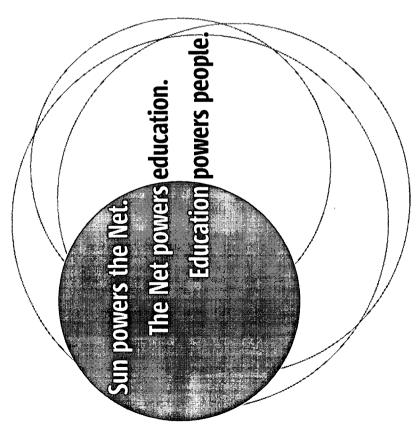
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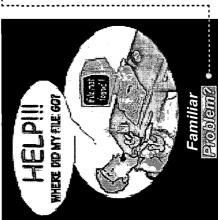
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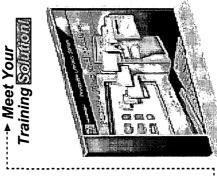
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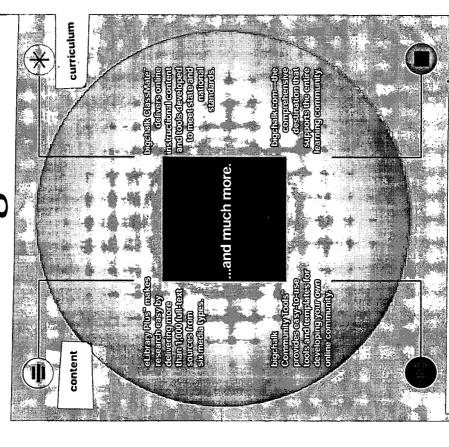
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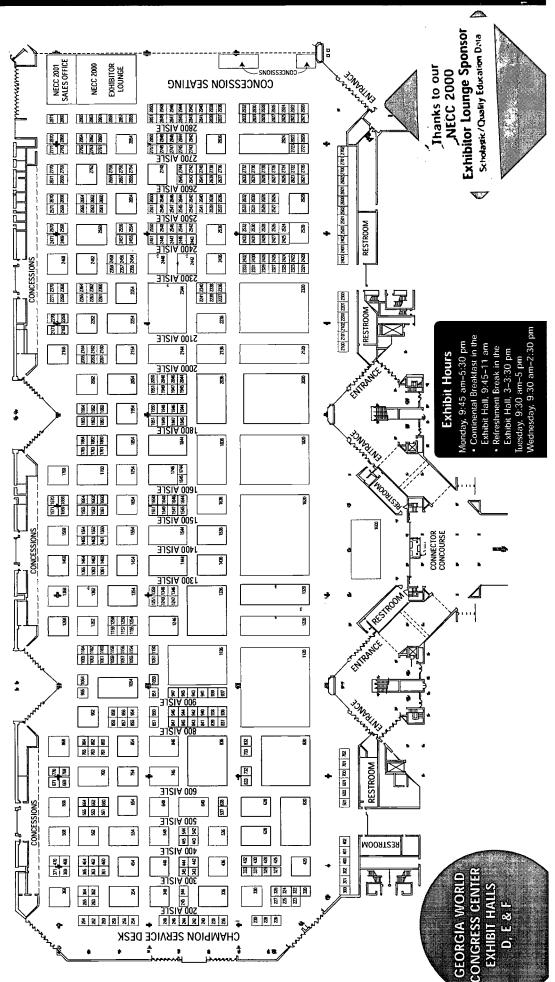
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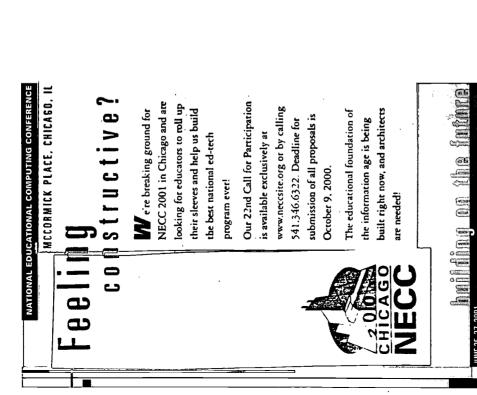
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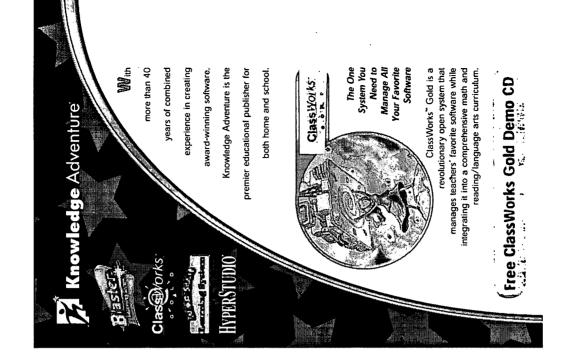
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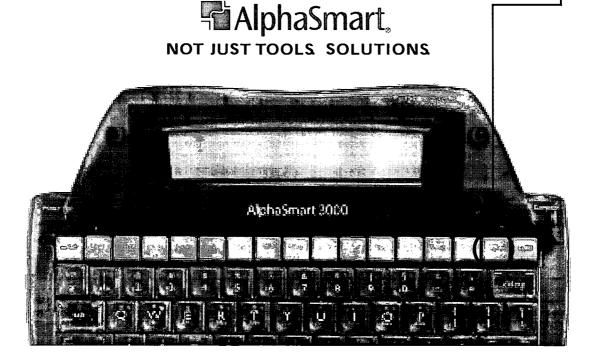
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#### **About Your Host**

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These descriptions are provided for the 14 professional societies/associations that belong to the National Educational Computing Association (NECA). Contact information for each society's NECA representative is given following the society's description. Information about each society can also be found on the NECA Web site (<a href="www.neccsite.org">www.neccsite.org</a>).

#### ISTE-International Society for Technology in Education

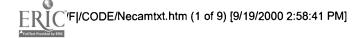
The International Society for Technology in Education (ISTE) is the largest teacher-based, nonprofit organization in the educational technology field. Its official mission is "to promote appropriate uses of information technology to support and improve learning, teaching, and administration at the K-12 levels and in teacher education."

ISTE publications focus on the effects of computers, software, and other technologies on classroom teaching, curriculum, and teacher education. Learning & Leading with Technology (L&L), ISTE's monthly magazine, spotlights practical classroom uses of computer hardware and software. ISTE's monthly online newsletter, ISTE Update, keeps members in touch with recent news and trends in educational technology. The Journal of Research on Computing in Education (JRCE), as well as ISTE's other scholarly journals, assists teachers in determining research-supported directions for technology initiatives. ISTE also publishes a wide range of books for teachers interested in enhancing instructional uses of computers at the precollege level. These publications now include the nationally recognized Generation www.Y materials as well as the National Education Technology Standards for student achievement in Grades K-12.

Major components of ISTE's teacher-outreach programs include:

- Teacher-led workshops at major conferences, offering hands-on approaches to new instructional technologies
- ISTE-sponsored conferences and leadership symposia that provide teachers with enhanced career development opportunities
- National representation in Washington with regular updates to members on issues such as E-rate and other initiatives that affect technology and education
- National accreditation standards for applying information technology in education, developed by ISTE for NCATE and NETS
- Networking through ISTE's Special Interest Groups (SIGs) that link tech coordinators, computer science educators, Logo users, telecommunications educators, hypermedia/multimedia users, and others
- More than 50 local and regional Affiliates, organizations whose members support ISTE goals and distribute ISTE information through their newsletters, conferences, and membership meetings

Contact: ISTE Customer Service Office, 800.336.5191, fax: 541.302.3778, iste@iste.org, www.iste.org



#### ISTE SIGTC-Special Interest Group for Technology Coordinators

The Special Interest Group for Technology Coordinators (SIGTC) is a professional organization that helps technology coordinators meet the challenges of a rapidly changing field. We provide an excellent forum to identify problems and solutions, and share information on issues facing technology coordinators at the precollege level.

SIGTC publishes SIGTC Connections through the International Society for Technology in Education (ISTE). Articles in SIGTC Connections contain helpful information and answers to questions such as:

- What are some ways technology coordinators are successfully organizing and communicating with teachers and administrators?
- What strategies are technology coordinators using to enlist the support of school boards and administrators?
- How do technology coordinators keep informed of new trends and developments in this rapidly changing field?

For general information, contact ISTE (see preceding). For information on ISTE's SIGTC, contact Bonnie Marks, Alameda County Office of Education, 313 W. Winton, Hayward, CA 94544.

#### ISTE SIGTE-Special Interest Group for Teacher Educators

SIGTE is the ISTE Special Interest Group for Teacher Educators involved in educational technology. SIGTE provides a forum for members to share successes, raise questions, and meet the challenges of helping other professionals use technology to enhance learning and education. SIGTE publishes a quarterly journal, the Journal of Computing in Teacher Education (JCTE), that works to provide its members with the answers to practical, leadership, research, and theoretical questions, such as:

- What is happening in K-12 computer education that relates to teacher education programs?
- What funding issues are in the forefront of current preservice and inservice teaching areas?
- What are the directions in teacher education as related to computer and technology education?
- How can educators become effective critics and implementers of innovations using technology?

Each year, SIGTE gives a cash award at NECC for the best paper describing research on technology in teacher education; the paper is presented at the conference.

For general information, contact ISTE (see preceding). For information on ISTE's SIGTE, contact Judy Robb, University of New Hampshire, Department of Education, Morrill Hall, Durham, NH 03824, jkull@christa.unh.edu.

## AAHE/The TLT Group-American Association for Higher Education/The Teaching, Learning, and Technology Group

AAHE is a membership association of individuals interested in improving the effectiveness of the higher education enterprise as a whole and their own effectiveness in their particular setting. The association's membership includes more than 8,000 administrators, faculty, and students from all sectors, as well as policy makers and leaders from foundations, business, and government.

AAHE is higher education's citizen's organization, in which individuals step beyond their special roles to collectively address the challenges higher education faces. Members share two convictions: that higher education should play a more central role in national life, and that each of our institutions can be more effective. AAHE helps members translate these convictions into action.

Through conferences, publications, and special-interest projects, members acquire both the "big picture" and the practical tools needed to increase their effectiveness in their own setting and to improve the enterprise as a whole.

Contact: Steven Gilbert, AAHE/The TLT Group, One Dupont Circle, Suite 360, Washington, DC 20036-1110, gilbert@tltgroup.org, www.tltgroup.org

#### ACM/SIGCAS-Special Interest Group on Computers and Society

With a membership of approximately 1,000, this professional group seeks to identify social and ethical issues raised by computer technology and provide a forum for examining these issues. SIGCAS was one of the sponsors of the ACM Policy98 Conference held in Washington, D.C., which brought together computer professionals and government policy makers to discuss the critical technology issues that affect social policy.

SIGCAS publishes a quarterly newsletter, Computers and Society, which is a primary source of material on this topic. As a vehicle of communication for the SIGCAS membership, the newsletter includes news, comments, and articles on societal issues raised by computing technology. One of the few periodicals on this subject, it provides a flexible and timely forum for important, evolving topics, such as privacy, equity of access, de-skilling of the workplace, regulation of the Internet, and intellectual property rights. There are also monthly educational columns that include ethics scenarios and case studies, pedagogical ideas, and reviews of new textbooks in the area of ethics and social effects that are useful for high school, community college, and university educators.

According to a recent membership survey, about 40% of SIGCAS members teach course material on computers and society. In recent years, SIGCAS has organized sessions at computer conferences on new methods for teaching the ethical and social effects of computers.

Contact: C. Dianne Martin, CS Department, George Washington University, 7th Floor, Academic Center, Washington, DC 20052, diannem@seas.gwu.edu



### ACM/SIGCSE-Special Interest Group on Computer Science Education

SIGCSE became a special interest group of ACM in 1970. It currently consists of more than 2,000 members from educational, industrial, and governmental communities interested in various aspects of computer science education. SIGCSE has goals of encouraging and assisting in the development of effective academic programs and courses in computer science, and promoting research in computer science education.

The following are objectives of SIGCSE:

- 1. To provide a continuing forum for discussion of common problems among education and other computer scientists through organized meetings and symposia.
- 2. To publish a bulletin at least quarterly containing information aimed specifically at those interested in computer science education.
- 3. To work closely with the Education Board of ACM to ensure implementation of effective education programs by the association.

Contact: Harriet Taylor, ELRC-111 Peabody Hall, Louisiana State University, Baton Rouge, LA 70803, <a href="mailto:taylor@asterix.ednet.lsu.edu">taylor@asterix.ednet.lsu.edu</a>

#### ACM/SIGCUE-Special Interest Group on Computer Uses in Education

SIGCUE provides a forum for the discussion of ideas, methods, and policies related to all aspects of computers in the educational process. Established in 1969, its membership (more than 1,400 persons) comes from many countries and numerous, diverse institutions and businesses.

SIGCUE publishes a newsletter, SIGCUE Outlook. Recent topics have included preservice education in educational computing, international reports on educational computing, and a teacher training curriculum project. SIGCUE also sponsors and organizes technical sessions at ACM annual meetings, the National Educational Computing Conference, and other national and regional meetings of interest to its members.

Among SIGCUE's goals are:

- 1. Helping to bring the technical expertise within ACM to bear upon educational computing generally.
- 2. Cooperating with other special interest groups or educational societies to promote attention to educational computing issues.
- 3. Providing written and verbal forums for members and the educational community to exchange ideas concerning computer uses in education.

Contact: Karen Gould, Metro School District of Wayne Township, 1220 S. High School Drive, Indianapolis, IN 46241

## ACM/SIGUCCS-Special Interest Group on University and College Computing Services

SIGUCCS provides a forum for those involved in providing computing services on a college or university campus. The topics addressed by SIGUCCS include managing campus computing, computing as it relates to the overall goals of the institution, and the state of the art in various types of college and university computing services. SIGUCCS provides opportunities to discuss and share ideas and experiences with others.

Two annual conferences are regular activities of SIGUCCS. The Computing Center Management Symposium addresses the many aspects of managing computing on campus. This includes hardware, software, planning, finances, and personnel, to name few. The User Services Conference covers more directly the delivery of particular services to the higher education community. Tutorials on relevant issues are held at both conferences.

In other projects, SIGUCCS offers a peer review of the university computing function. Upon request of the computer center director, members of SIGUCCS will formally analyze and comment on different areas of the campus computing function. SIGUCCS also publishes a quarterly newsletter. We consider the newsletter our most important form of communication because it reaches all members and is subscribed to by numerous university computing centers. Conference proceedings are published either as separate documents or as part of the newsletter itself.

Contact: Chuck Chulvick, Raritan Valley Community College, Box 3300, Somerville, NJ 08876, 908.526.1200, ext. 8409, <a href="mailto:cchulvic@raritanval.edu">cchulvic@raritanval.edu</a>

## AECT-The Association for Educational Communications and Technology

The Association for Educational Communications and Technology (AECT) is an international professional association dedicated to the improvement of instruction at all levels through the appropriate use of instructional technology. AECT's purpose is to promote the effective design and use of technologies in the teaching/learning process, worldwide.

Founded in 1923, AECT has evolved as an organization as the technology used in education has evolved, from the early use of traditional audiovisual media to today's interactive and multimedia technology platforms. AECT members can be found at all levels of public and private education, from elementary schools to colleges and universities, as well as in the corporate and government sectors.

Organizationally, AECT has 7 special interest divisions and 5 councils. Affiliates include 8 chapters, 46 state affiliate organizations, and 14 national and international affiliate organizations. With more than 4,000 members, AECT is the largest international association for professionals involved in the integration of instructional technology in to the learning process. AECT is the United States representative to the International Council for Educational Media (ICEM).

Tech Trends is the association's professional periodical. Published during the school year, Tech Trends features authoritative, practical articles about technology and its integration in to the learning environment. Educational Technology Research and Development (ETR&D), the association's research quarterly, is the only refereed journal focusing entirely on research and instructional development in the rapidly changing field of educational technology.

AECT also publishes reference books on a variety of topics, including practical applications of technology, research, copyright, and standards and guidelines for the field of special interest to instructional technologists.

The AECT annual convention is held in February, drawing participants from around the world. Additionally, AECT sponsors an annual summer institute for leaders within AECT and its affiliates.

Contact: Phil Harris, AECT Executive Director, 1800 N. Stonelake Drive, Suite 2, Bloomington, IN 47404, pharris@ait.net, 812.335.7675, fax: 812.335.7678

#### CCSC-Consortium for Computing in Small Colleges

CCSC is a nonprofit organization focused on promoting effective use of computing in smaller institutions of higher education that are typically nonresearch in orientation. It supports activities that assist faculty in such institutions to make appropriate judgments concerning computing resources and educational applications of computer technology.

Because departments in smaller colleges and universities are usually small and not highly specialized, the consortium encourages the sharing of expertise, effective curriculum patterns, and efficient technological applications. The consortium is concerned with the advancement of major programs in both computer science and computer information systems, and with the use of computers in the liberal arts and sciences.

The Journal of Computing in Small Colleges is distributed to faculty at more than 400 colleges across the country. Now in its seventh volume, its five annual issues are averaging 500 pages, with articles addressing the broad spectrum of curriculum and computer use in higher education.

Contact: Gail Miles, Lenoir-Rhyne College, Box 7482, Hickory, NC 28603, miles@lrc.edu

#### CoSN-Consortium for School Networking

The Consortium for School Networking is a nonprofit organization formed to further the development and use of telecommunications in K-12 education. CoSN provides a dynamic forum for educational, institutional, and corporate organizations that share the goal of promoting state-of-the-art computer networking technology in schools. By working together through CoSN, these separate groups form a powerful national voice focused on realizing the promise of K-12 networking.

CoSN has identified three areas of work that are key to fulfilling its mission:

- 1. Leadership Enhancement: CoSN will engage in programs and activities to improve the capabilities of those in leadership positions at the national, state, and local levels to ensure that information technology has a direct and positive effect on student learning.
- 2. Advocacy: CoSN will maintain a strong and effective voice in policy formation and implementation at the federal level to ensure that law and policy at the federal level serve the interests of all students in our schools.
- 3. Coalition Building: CoSN will actively foster partnerships and collaborate with other organizations, government agencies, and businesses to improve access, equity, the performance of networking technology in schools, the effect of information technology on student learning, and teacher productivity.

CoSN's activities for accomplishing this work are many. Its annual K-12 Networking Conference has become the premier forum on telecommunications in the classroom by bringing together key players from national, state, and local education, corporations, and government to focus on the most important current issues in K-12 networking. Electronic newsletters and member alerts give up-to-the-minute announcements on K-12 networking issues with specific legislative updates from legislative consultant Leslie Harris. CoSN's award-winning Web site at www.cosn.org offers educators a one-stop resource for information on K-12 networking trends and developments. COSNDISC, a moderated online discussion open to everyone on the Internet, serves as a meeting place for everyone interested in school networking.

Contact: Toni Miller, Membership Director, 202.466.6296, ext. 15, infor@cosn.org

## **EDUCAUSE-Transforming Education Through Information Technologies**

The mission of EDUCAUSE is to help shape and enable transformational change in higher education through the introduction, use, and management of information resources and technologies in teaching, learning, scholarship, research, and institutional management.

The incorporation of EDUCAUSE in 1998 was the result of a consolidation of two prominent educational technology associations-CAUSE and Educom-that recognized an increasing convergence in their missions and goals. The association's focus encompasses the management and use of instructional, research, administrative, and library computing; telecommunications and networking; and administration of this enterprise.

Today, librarians, faculty, presidents, deans, registrars, business officers-most of the campus community-use technology-based information resources and are concerned with using them more effectively and efficiently. The professionals who plan for and manage such resources are challenged to fully leverage the significant investment their campuses have made in them, supporting the growing information needs of staff, faculty, and students, while positioning their institutions for the future. EDUCAUSE provides the leadership,

information, professional development, and services our members need to achieve this end.

Membership in EDUCAUSE is open to institutions of higher education, corporations serving the higher education information technology market, and other related associations and organizations. EDUCAUSE provides benefits to both the institutions/organizations and their individual representatives who participate in our activities and use our programs and services, including professional development opportunities, publications, strategic policy initiatives, and information services.

Contact: EDUCAUSE, 303.449.4430, info@educause.edu, www.educause.edu/

#### **IEEE-Computer Society**

The Computer Society is the world's largest association of computing professionals, with a total membership of approximately 108,000 computer scientists, computer engineers, and interested professionals. Society membership is open to IEEE members, associate members, student members, and non-IEEE members who qualify for affiliate membership. An affiliate member is a person who has achieved status in his or her chosen field of specialization and whose interests focus on the computing field.

Every Computer Society member receives Computer, a peer-reviewed monthly magazine of general interest to computing professionals that also covers society news and events. Nine specialized magazines and eight transactions are also available to society members as optional subscriptions, and to nonmembers, libraries, and organizations.

Magazines published by the Computer Society include IEEE Computer Graphics and Applications, IEEE Micro, IEEE Design and Test, IEEE Software, IEEE Expert, IEEE Annals of the History of Computing, IEEE Multimedia, and IEEE Parallel Distributed Technology. Research-oriented transactions include IEEE Transactions on Computers, IEEE Transactions on Software Engineering, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Knowledge and Database Engineering, IEEE Transactions on Parallel Distributed Systems, IEEE Transactions on VLSI Systems, and IEEE Transactions on Visualization and Computer Graphics. The Computer Society Press publishes nonperiodical literature, including tutorial texts and conference records. The society's catalog contains approximately 900 titles that are available for purchase.

The society sponsors or co-sponsors more than 100 conferences and meetings ranging from workshops and symposia with a few dozen participants to major conferences with many thousands of attendees. More than 30 technical committees offer the opportunity to interact with peers in technical specialty areas, receive newsletters, and conduct conferences and tutorials.

The Computer Society has more than 100 local chapters throughout the world and an additional 100-plus student chapters that provide the opportunity to interact with local colleagues and hear experts discuss technical issues. In addition, tutorials, educational activities, accreditation of computer science and engineering academic programs, the development of standards, and an international electronic mail network all play prominent roles in the society's activities.

Contact: Allen Parrish, Department of Computer Science, The University of Alabama, Box 870290, Tuscaloosa, AL 35487-0290, 205.348.3749, fax: 205.348.0219, parrish@cs.ua.edu

#### SCS-Society for Computer Simulation, International

The Society for Computer Simulation, International (SCS) is the only technical society devoted primarily to the advancement of simulation and allied technology. It has a worldwide membership and a network of regional councils that covers the United States, Canada, the United Kingdom, Europe, and the Pacific Rim.

Simulation is used in every scientific and technical discipline, including aerospace, biomedical, business, education, engineering, and manufacturing. Areas that have been specifically recognized as important to SCS members include artificial intelligence, computer-aided design and manufacturing (CAD/CAM), education, environmental issues, knowledge-based systems, robotics, simulators, and standards.

The society publishes Transactions of SCS, a quarterly archival journal, and SIMULATION, a monthly journal of applications of simulation.

In addition to the flagship Summer Computer Simulation Conference (SCSC), the society sponsors several other conferences, including the SCS Western Multiconference, the SCS Eastern Multiconference, the Winter Simulation Conference, and the European Simulation Symposium.

Contact: Society for Computer Simulation International, PO Box 17900, San Diego, CA 92177-7900, 619.277.3888, fax: 619.277.3930, info@scs.org, www.scs.org/
NECA representative contact: Charles Shub, Computer Science Department, University of Colorado-Colorado Springs, Colorado Springs, CO 80933, cdash@cs.uccs.edu, 719.593.3492, fax: 719.262.3369, www.cs.uccs.edu/~cdash

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Research Paper: Connecting Technology to Teaching and Learning

## Interactive Computer Models for Science Education

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Key Words: computer models, interactive learning, science education

#### **Abstract**

At Marshall University, science faculties are developing computer-based interactive multimedia models for high-school students. These models are designed to promote and enhance science education among high-school students and help high-school teachers utilize computer technology in the classroom. This paper describes a development project funded by the government of the state of West Virginia for the last three years. The developed models are designed to promote science education in remote Appalachian high schools that lack ready access to either extensive laboratory equipment or computer resources. The paper describes the computer models and highlights the authors' experience working with high-school teachers.

#### Introduction

Concepts of teaching and learning, such as interactive learning, fostering critical thinking, and pragmatic teaching, have taken a major role in education, especially in the fields of science (Miller & Cheetham, 1990; Trimbur, 1989). Many educational organizations, such as the National Association for the Advancement of Science and the National Research Council, are calling for interactive learning and the involvement of both high school and college students in investigative/interactive learning of science (Soloway et al., 1997). To increase the knowledge of science and promote interest and enrollment of high-school students in basic sciences, these organizations recognize and stress the need for new techniques for teaching traditional science concepts in an innovative and stimulating manner.

In West Virginia, the state government is motivating a reform of science and technology education in high schools. The state government is actively funding projects that lead to innovative teaching techniques using current computer technology. The goal is to bring a change in how students learn course content and become active learners with critical- and creative-thinking abilities.

<sup>&</sup>quot;Connecting @ the Crossroads"



Faculties at Marshall University have been active participants in the reform process. The authors developed a set of computer-based interactive multimedia models to promote science education. The models are used by a selected group of high schools in the state, and are taught by science teachers in a variety of courses including Coordination and Thematic Science, Environmental Earth Science, Chemistry, Honors Chemistry, Applied Biology, Advanced Biology, AP Biology, Anatomy, and Independent Study. Using these models, students work with real-world scenarios and learn the science behind those scenarios. The models interactively teach students the concepts of basic sciences using a multidisciplinary approach. The rest of the paper addresses salient features of the developed models and how they help increase students' learning of science concepts.

#### The Computer Models

For the last three years, the authors received funding to develop, for high-school students, intuitive and interactive computer-based simulation models for learning the process of scientific analysis behind real-world scenarios. The authors are working with high-school teachers to help them utilize the developed models and computer technology in the classroom. The primary objectives of the models are to:

- 1. promote interactive science education among high-school students,
- 2. provide a mechanism of experiencing the process behind real-life scientific analysis methods that would otherwise not be possible because of limited resources,
- 3. provide a high level of interactivity so that the students feel involved in the process, and
- 4. increase students' interest and enrollment in basic sciences.

In addition to teaching science concepts, the models are designed to increase student awareness of issues that have a direct and critical effect on the quality of life and the economy of the state. For example, the Acid Mine Drainage model simulates the effect of the acid discharge from abandoned mines to streams and rivers. As of February 2000, we have completed the development of the DNA model, Wetland model, and Acid Mine Drainage model.

#### Description of the Models

The models are integrated in to a virtual community called *Highland Park*. Students learn to integrate a number of scientific and mathematical operations as they interact with their computers in a virtual world. *Highland Park*, like much of Appalachia, has undergone considerable environmental damage from past mining and timbering operations and is now being developed into a tourist center and nature preserve. Students enter the park through an interactive image that first explains their work assignments and then provides access to these assignments. Students are directed to assess the effects of past environmental degradation and to develop plans to remedy this environmental degradation by interacting with the computer models.

Some of the models require numeric data collection and manipulation. Such models are integrated with Microsoft® Excel and Word for handling numeric and textual data. In most cases, data files have default names so that the users do not have to worry about which files to access and save. The models are installed on



the server, and accounts are assigned to students. Student progress is saved in a database and is accessed by a user name and password. The database allows the students to save their work during a session and continue at a later time. The instructor explains the experiment and the necessary background materials using handouts, online documents, Web pages, and so forth. Students are divided in to groups, members of which are rotated.

#### DNA Model

The DNA model simulates the process of DNA analysis using the Restriction Fragment Length Polymorphism (RFLP) method. The model uses a crime scene of a badly burned car that was found at the base of a cliff in *Highland Park*. The model starts by presenting a full description of the crime scene and detailed information about the car and the four victims found at the scene. In addition, the model provides necessary information about relatives of the victims.

Students are informed that a murder has been committed and that the crime can be solved only by using DNA analysis on tissue and blood samples gathered at the crime scene and from relatives. The model interactively guides students through the entire DNA analysis process, from preparing blood samples to reading the final results and presenting a final report. Throughout the process, students are asked to make decisions and predictions. Based on their decisions, they may get incorrect results.

Initially students enter the laboratory, where they use interactive lab tools to cut and size DNA. DNA data are entered in to a database. Students take the initial step in solving the crime by querying the database for DNA matches with crime scene evidence. Ultimately, a lab kit, provided by the Integrated Science and Technology Program at Marshall University, provides the final clues necessary to solve the crime.

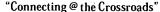
#### Wetland Model

The Wetland model simulates the effect of tourism on the wetlands. Using tools built in to the model, students assess the effect of visitors on the various elements of the wetland, including birds, rattlesnakes, salamanders, and a trout fishery. They also assess the effect of waste from condominiums at a nearby ski resort.

Students assess the possible usefulness of a wetland as a tourist attraction by inventorying the bird fauna. Using a binocular tool, students capture images of birds and then record their calls. Images of nests and basic ecological data are also collected. After determining that the wetland contains suitable bird species to attract tourists, students must build a quantitative model that predicts how many tourists can be allowed in to the wetland without negatively affecting the wetland habitat. Students also use the mark-recapture tool to inventory the number of rattlesnakes in an abandoned mine site used as a tourist attraction, salamanders used for food in a turkey habitat, and trout in a trout fishery.

Students are informed that nitrogen-based waste from condominiums at a ski resort may negatively affect a portion of the wetland. They are instructed to build a qualitative model that relates increases in nitrogen concentration to changes in pH, dissolved oxygen, the photosynthetic rate, carbon dioxide, and alkalinity.





#### Acid Mine Drainage Model

The Acid Mine Drainage model simulates the treatment of acid mine water from an old abandoned mine operation. The model gives students a history of mining in the Blackwater River Valley of West Virginia. Students are presented with an image of the largest treatment facility; maps of the area; and a database that gives pH, dissolved oxygen, alkalinity, carbon dioxide, calcium carbonate, and air and water temperatures for monthly samples gathered during a one-year period. Students go through a series of simulations of lab exercises that demonstrate how pH changes relative to alkalinity. Students interpret their lab data and data from the database relative to standard titration curves. They then use their titration curves and water quality data from the database to interpret overall water quality in the Blackwater River Basin. Finally, students locate the treatment facility on the river by noting where pH and alkalinity increase dramatically. The goal of this model is to direct students to estimate the cost of treating a 4 cubic feet per second (cfs) acid mine discharge for one year. This task requires students to learn basic chemistry skills such as balancing equations and calculating and measuring water quality parameters, including pH, alkalinity, acidity, and hardness.

#### Acid Rain Model

In the Acid Rain model students try to establish a relationship between acidity in rainfall and whether acid rain is negatively affecting a spruce forest. Students pick five-year-old spruce trees from the forest by drawing a transect line on a scanned photograph of a spruce tree forest. Next they measure the height of the trees from the scanned photographs using a custom tool developed and integrated in to the model. This process is repeated for five sets of data. The acidity of rainfall is simulated by using various concentrations of aerated soft drinks, and measured using pH meters in the wet laboratory. The data are automatically moved in to an Excel environment where students draw graphs and conduct statistical tests to see whether the relationship between growth and acidity is significant. The results are then imported in to MS Word to generate reports.

#### **Experience and Benefits**

The primary benefit of the models is that students learn the scientific processes of making their own hypotheses, and proving or disproving them using proper inferences, analysis, and critical-thinking skills. Using current news events helps keep up interest in the scientific process. In addition, some of the tedious and time-consuming steps of the simulated process can be reduced or made more interesting using interactive multimedia. Other benefits are that students learn practical skills using standard tools.

#### Conclusions and Future Work

The models are currently used in high-school science classes. The current phase of the development includes expansion of each model and integrates the models in to one interactive system, called Wildlife Nature Preserve. The new integrated system includes a set of tools that allows the students to work with wildlife and environmental issues. The tools include a Wildlife Surveying Tool, Visitor Impact Estimating Tool, Environmental Systems Modeling Tool, and Environmental Analysis Tool.

As part of the project, we have conducted training workshops for high-school teachers. Science teachers from selected high schools were invited to participate and receive training and support materials. We also have set a number of scheduled meetings with the teachers and visits to those schools. In addition, we conducted two workshops during the West Virginia Science Teachers Association Annual Conference (Al-Haddad & Little, 1999a, 1999b). We plan to invite more high schools and put the models in more classrooms throughout the



state. We presented the concept of these models in national conferences and workshops to science teachers (Little, 1997, 1998; Little & Al-Haddad, 1999), and received favorable comments and recommendations.

## References

Al-Haddad, H., & Little, M. (1999a, October). *Acid mine drainage model*. Workshop presented at the fifth annual conference of the West Virginia Science Teachers Association, Charleston, WV.

Al-Haddad, H., & Little, M. (1999b, October). *DNA simulation model*. Workshop presented at the fifth annual conference of the West Virginia Science Teachers Association, Charleston, WV.

Little, M. (1997, June). *DNA model*. Workshop presented at the AAC&U Science Institute, St. Michael's College, VT.

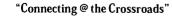
Little, M. (1998, July). Computer software designed for integrated science students. *Proceedings of the 1998 Syllabus Conference and Workshops, Sonoma State University, Rohnert Park, CA, 11*(11).

Little, M., & Al-Haddad, H. (1999, June). *Education in the rural community*. Paper presented at the West Virginia IT Conference and Exposition, Charleston, WV.

Miller, J. E., & Cheetham, R. D. (1990). Teaching freshmen to think—active learning in introductory biology. *Bioscience*, 40(5), 388-391.

Soloway, E., Pryor, A., Krajcik, J., Jackson, S., Stratford, S., Wisnudel, M., & Klein, J. (1997, October). ScienceWare's Model-It: Technology to support authentic science inquiry. *T.H.E. Journal*, 54–56.

Trimbur, J. (1989, October). Consensus and difference in collaborative learning. *College English*, 602–616.





Research Paper: Staying Connected with Professional Development

# Information Technology in Teacher Education: A Closer Look

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#### Key Words: preservice teacher training survey

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# Introduction: The 1998 IT in Teacher Education Survey

In 1998, the author and others collected information on 416 schools, colleges, and departments of education (SCDEs) in the United States (Moursund & Bielefeldt, 1999). Respondents (mostly deans and education faculty) were asked to rate their institutions in terms of a variety of indicators of capacity, including course work, technology facilities and support, skills of graduates, and field experience opportunities.

A factor analysis of the 32-item survey indicated four groups of items in which the questions were closely related to one another:

- Integration of technology in to the program (7 items)
- Facilities (11 items)
- Field experience (4 items)
- Applications skills (4 items)

Of these, integration (the actual of use of technology in the program) was the best predictor of other aspects of capacity. When questions were clustered in to factors, we observed scattered significant differences on demographic characteristics (e.g., institutions affiliated with the National Council for Accreditation of Teacher Education tended to report more integration of technology), but we could not identify any particular type of institution more likely to report high technology capacity.

Six items, having to do with hours of course work, faculty technology skills, technology planning, and distance education, were not statistically related to any of the factors. The number of hours of technology training integrated in to other course work had a moderate correlation with other ratings of capacity;



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however, technology-specific course work had little correlation even with the reported technology skills of graduates.

Our tentative recommendation was that teacher training institutions should concentrate on increasing integration of technology throughout their programs through faculty staff development and field experiences rather than on developing additional technology courses.

# **High-Capacity Programs**

One limitation of large survey studies is that they often do not include information on how the respondents achieved the levels of capacity they reported. In an effort to better ground our findings and to provide guidelines for other institutions, we conducted a follow-up survey of those institutions that had above-average ratings on all four factors in the 1998 survey. In identifying these high-capacity institutions, we first limited our search to those institutions that responded to at least 30 of the 32 survey items, the mean level of response. Then we calculated a total score for each institution on the survey items in each of the four factors. Those scores were compared with the average scores for each factor.

We selected SCDEs that rated themselves highly on all four factors because we believe that aspects of technology capacity are necessarily related. Observers of college classrooms have reported that effective use of technology depends on a combination of facilities, technical support, professional development, and leadership (Barron & Goldman, 1994; Strudler, McKinney, & Jones, 1995). High capacity in one area, such as equipment, may have a limited effect on teaching and learning if it is not complemented with the training and other support needed to make use of the facilities. This relationship was observed in our 1998 survey, in which there were moderate correlations (r=.34 to .62) among the four factors we identified.

Using the previously described procedure, we identified 62 institutions that reported above-average levels of capacity on all four factors. In the spring of 1999, we sent these SCDEs a follow-up survey that asked respondents how they achieved their reported levels of capacity in technology preparation of new teachers. Specifically, we asked each institution to describe what helped or hindered them in providing technology facilities, integration of technology in their programs, field experiences, and graduates with basic technology skills.

In addition, we asked follow-up questions about two findings from the 1998 survey. Noting that the survey did not find a relationship between high numbers of technology course hours and other measures of capacity, we asked each respondent to describe the role of required technology courses in teacher preparation. We also asked respondents to rate (on a scale of 1-4) the importance of several alternative methods of providing technology training, including formal course work within and outside the education program, training integrated in to other education and noneducation course work, prior training in high school or community college, and informal learning.

Another question that we felt required elaboration had to do with technology planning. In 1998, we asked only whether an institution had a written, funded, regularly updated technology plan. Sixty-five percent did not (or the respondents were uncertain whether one existed). Those that did have a plan had somewhat higher scores on the different factors, but the presence of a technology plan explained at most about 5% of the variance. We felt we needed more information on the role of technology planning. We asked the high-capacity institutions (half of whom had plans) to rate, on a scale of 1-4, how important a formal technology plan is to implementing information technology in teacher education, and to describe the characteristics of an effective technology plan. The survey questions appear as an appendix.



Twenty-two of the 62 high-capacity institutions (35%) responded to the 1999 survey. As a group, these SCDEs had mean scores on each of the factors that were .8 to .9 standard deviations above the means for the full sample of 416 institutions (Table 1). As might be expected, standard deviations at this upper end of the sample distribution were considerably compressed.

**Table 1. Mean Scores on Factors for SCDEs** 

Factors	Facil	ities	Integ	ration	Applic	ations	Field Ex	perience
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
416 SCDEs 1998	30.7	7.9	17.3	6.0	15.9	3.3	9.5	3.6
22 Respondents 1999	38.2	3.9	22.7	3.8	18.5	1.7	12.7	2.3

Note that the questions under each of the factors should be treated as independent scales. There are different numbers of questions and different numbers of possible points under each of the factors. We do not consider the total score on the 1998 survey to be a reliable measure of capacity because the meaning of high or low scores on some items depends on interpretation. For instance, some institutions felt that a low score on required technology courses was a strength because it meant technology was integrated throughout the programs.

Respondents came from five of the six Regional Educational Technology Consortia areas. Overall mean ratings for schools in different regions were similar. The proportion of public and private institutions (55% vs. 45%) was the same in both samples. Compared with the full sample, the high-rating SCDE respondents had a somewhat higher median number of graduates in 1998 (136 vs. 120) and a higher percentage of NCATE affiliation (86% vs. 62%).

#### **Procedure**

The author and a research assistant coded each open-ended response from each respondent on the 1999 survey. Types of responses were not specified in advance; each reader was free to propose categories of responses and to sort respondents' comments in to those categories. Units of response could be sentences, phrases, or (in the case of respondents who tended to write in lists) individual words. On most questions, the two readers proposed similar meanings for 60-80% of the response units on the first reading. Combining or subdividing categories so that both readers used the same list of categories brought the agreement to 80% or more.

#### Results

The types of responses for each item were tallied to identify common themes. Tables 2–9, 11, and 13 show the numbers and percentages of respondents providing each type of answer to each question. (Note that the percentage of respondents for each answer is independent of percentages for other answers; the column totals are not meaningful.) The discussion following each table includes excerpts from the narrative responses. Tables 10 and 12 show the ratings respondents gave for the usefulness of various sources of technology training and for technology plans.

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#### Technology Facilities: Helped and Hindered

Table 2. Elements Reported to Support Provision of Technology Facilities (22 Respondents)

Responses	# Responses	% Respondents
Interest, leadership, commitment	18	82%
Financial resources	16	73%
Infrastructure and technical support	7	32%
Building renovations and upgrades	5	23%
Integration of technology in curriculum	3	14%
Influence of or integration with K-12 technology programs	3	14%
Long-range planning	3	14%
Training, professional development	2	9%
Integration of technology with other departments; sharing	2	9%
Accreditation standards	1	5%

Table 3. Elements Reported to Hinder Provision of Technology Facilities (20 Respondents)

Responses	# Responses	% Respondents
Lack of financial resources or budget allocations	11	55%
Size or age of facilities	5	25%
Personnel; lack of technically experienced faculty	4	20%
Lack of commitment to technology	2	10%
Lack of time	2	10%
Lack of planning or poor planning	2	10%
Lack of technology in K-12 schools	1	5%
"Mainframe mentality"	1	5%

Two factors stood out in helping institutions provide students and staff with adequate facilities: Commitment (mentioned by 82% of respondents) and money (mentioned by 73%). Finances were also the most commonly cited hindrance (55%) to providing facilities.

Another element—organizational infrastructure and technical support—was included as part of facilities on the original 1998 survey. However, seven respondents felt support was important enough to mention on its own.

Various elements were reported by different institutions as helping to drive technology improvements. The most important of these was building renovations, which provided opportunities to rewire and upgrade classrooms. By the same token, facilities that were difficult to upgrade (either because they were too old or being built too quickly) were cited by one quarter of respondents as an important hindrance.

Other "drivers" included long-range planning, the pressure of NCATE accreditation requirements, and the general integration of technology in the program.



#### Integration: Helped and Hindered

Table 4. Elements Reported to Help Faculty and Students Integrate Technology in to Classroom Practice (22 Respondents)

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Responses	# Responses	% Respondents				
Training, professional development	15	68%				
Technology infrastructure	11	50%				
Expectations of teachers, administrators, NCATE	9	41%				
Personnel: faculty initiative and skill	8	36%				
Incentives for faculty	5	23%				
Technology skills of incoming students	2	9%				
Student course work	2	9%				
Support from K-12 schools	1	5%				

Table 5. Elements Reported to Hinder Faculty and Students from Integrating Technology in to Classroom Practice (21 Respondents)

Responses	# Responses	% Respondents
Lack of infrastructure	11	52%
Lack of time	6	29%
Lack of enthusiasm or buy-in	4	19%
Lack of mentors or examples in practice	3	14%
Lack of K-12 technology capacity	3	14%
Other competing requirements of the program or institution	3	14%
Lack of financial resources	2	10%
Lack of training or professional development	2	10%
No hindrances	1	5%

The most helpful technique for promoting integration of technology in teacher education was reported to be professional development for college faculty (mentioned by 68% of respondents). Related to the first point, faculty initiative and skill in using technology were also described as being important to integration (36%).

Lack of professional development was mentioned by only two institutions. A greater concern for most respondents was technology infrastructure and facilities. About half the respondents felt that their facilities limited their ability to integrate technology; the other half felt their facilities were a strength.

Forces helping to drive integration efforts included expectations of teachers (for technology use by students), administrators (for technology use by teachers), and NCATE (for technology use by programs). The growing use of technology in K-12 schools also provides more opportunities to apply integration skills (see Field Experience in the following section), as well as an increasingly computer-adept student body coming out of high school.

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#### Field Experience: Helped and Hindered

Table 6. Elements Reported to Help Institutions Provide Technology-Related Field Experiences (22 Respondents)

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Responses	# Responses	% Respondents
Integration of technology field experience in the college program	7	35%
A high level of K-12 facilities and support	6	30%
Effective mentors (college supervisors and K-12 teachers)	6	30%
Funding (grants and bond measures) for facilities and training	6	30%
Dedication and willingness to learn; initiative	5	25%
Professional development at K-12 and college levels	5	25%
NCATE standards	1	5%

Table 7. Elements Reported to Hinder Institutions from Providing Technology-Related Field Experiences (18 Respondents)

Responses	# Responses	% Respondents
Lack of K-12 teachers using technology, whether or not it is present	11	61%
Lack of technology in K-12 schools	8	44%
Lack of time, lab access, or other resources in the college	4	22%
Lack of coordination by the college or university	2	11%
Lack of initiative by students	1	6%

The conditions reported to support technology-related field experience were diverse, with similar numbers of respondents (five to seven) mentioning integration with the college course work, levels of technology in K-12 schools, availability of mentor teachers and supervisors, initiative on the part of students, and training for K-12 teachers and college faculty. There was much greater agreement on the main limitation on field experience programs: the lack of capacity in K-12 schools. That includes both lack of hardware and a lack of teachers using technology (whether or not it is present).

Other hindrances included lack of technology facilities at the college, failure by the college to coordinate field experience opportunities, or failure by individual student teachers to take advantage of technology in the schools.

# Applications Skills: Helped and Hindered

Table 8. Elements Reported to Help Students Achieve Proficiency with Word Processing, E-Mail, World Wide Web, and Electronic Gradebooks (22 Respondents)

Responses	# Responses	% Respondents
Technology-specific course requirements	17	77%
Integration of technology in the program; expectations of	11	50%
proficiency		
Technology infrastructure	4	18%
Ongoing training and support (formal and informal)	3	14%
Strong student background in technology	1	5%



Table 9. Elements Reported to Hinder Students from Achieving Proficiency with Word Processing, E-Mail, World Wide Web, and Electronic Gradebooks (20 Respondents)

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Responses	# Responses	% Respondents			
Lack of infrastructure	9	45%			
Few or no hindrances	7	35%			
Not enough course work, or courses offered too late in the program	4	20%			
Lack of interest of skill in technology integration on the part of faculty	4	20%			
Lack of time for training and program development	2	10%			
Large and diverse classes for students	1	5%			

Most respondents agreed on what helped their students master basic computer skills: the technology training courses provided in their programs. The other main influence on student technology skills was the overall use of technology in the program: the expectations of faculty and the access and support provided by the institution.

For a third of the respondents, there *were* no serious obstacles to students developing applications skills. The SCDEs that did report hindrances listed lack of infrastructure as the leading problem, followed by lack of technology course work, lack of time to develop courses, and lack of faculty who could integrate technology in to other courses.

#### Sources of Training

When we asked respondents to rate various sources of technology training for preservice teachers, results tended to mirror responses to the previously mentioned applications skills item. Technology courses within the teacher training program were rated as essential by most respondents, followed by training integrated in to other education course work and informal individual learning. High-school experience and training from outside the program were not considered essential by most respondents (Table 10).

Table 10. Importance of Sources of Technology Training

Source of Training	# Respondents	Unimportan	Useful	Important	Essential	Mean
Û		t=1	=2	=3	=4	rating*
Technology courses within the	22	0	1	5	16	3.7
education program						
Technology integrated in to other	22	0	3	7	12	3.4
education course work						
Informal learning from peers or	17	0	4	4	9	3.3
self-study						
Prior training in high school or	21	0	9	9	3	2.7
community college						
Technology integrated in to other	22	1	9	9	3	2.6
noneducation course work						
Technology courses from outside	22	5	10	6	1	2.1
the program						
* ∑(rating x no. responses) / no. res	pondents					

# Role of Technology Course Work

Our respondents emphasized two points about the role of technology-specific course work: First, the courses build confidence and skills; second, they need to be followed up with actual use of technology in other course work. Eight of the respondents reported that the formal courses were basically a transition to the integration

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of technology; they may even be phased out over time. Also mentioned were the ideas that integration should be specifically taught as well as modeled, and that technology training was "preparation for the future," not necessarily for immediate integration (Table 11).

Table 11. Roles of Required Computer Courses in Training New Teachers (22 Respondents)

Responses	# Responses	% Respondents
A starting point to build confidence and basic skills	12	60%
Should be followed by integration in to other course work	11	55%
Should be minimized or eliminated in favor of integration	8	40%
A resource; provide support and tools for other course work	4	20%
Should specifically teach integration	3	15%
Necessary for preparing students for the future	3	15%

#### Technology Planning

The perceived value of technology planning apparently exceeds the actual practice of planning. Only half of the high-scoring respondents reported having technology plans, but all but one rated technology plans to be "Essential" or "Important" (Table 12).

Table 12. Importance of a Formal Technology Plan (22 Respondents)

[	Not needed=1	Useful=2	Important=3	Essentia <b>l</b> =4	Mean rating*
	0	1	5	16	3.7
	* $\sum$ (rating x no. resp	onses) / no. responder	nts		

All respondents—whether they had a plan or not—had ideas about what a useful technology plan should look like. At least half of the respondents said a plan should have specific goals and objectives; attend to integration of technology (not just provide hardware and software, although that is important); involve all important stakeholders; and be based on needs assessment and ongoing evaluation. Another feature mentioned was professional development. A variety of factors having to do with the practicalities of making a plan work were mentioned by several respondents. These included funding, incentives, and an implementation scheme (Table 13).

Table 13. Characteristics of a Useful Technology Plan (22 Respondents)

Responses	# Responses	% Respondents
Includes specific goals and objectives	13	65%
Includes integration with curriculum	11	55%
Involves all stakeholders	10	50%
Provides adequate facilities and support	10	50%
Provides for needs assessment, evaluation, and revision	10	50%
Provides for professional development	7	35%
Provides for adequate funding	5	25%
Is realistic	2	10%
Provides for actual implementation of the plan	2	10%
Includes incentives for following the plan	1	5%



#### Discussion

The responses to the 1999 survey tend to support our theory that infusing technology in to teacher preparation requires a comprehensive approach that attempts to balance facilities, faculty professional development, course work, and field experience. Responses in each area often referred to other aspects of capacity. For instance, integration was said to depend partly on having adequate technology facilities. Facilities in turn depend on a level of integration that creates demand. Student application skills are said to be related to both integration and facilities, but integration can itself be hindered by a lack of student computer skills.

Outside of the factors themselves, some helping/hindering agents were mentioned under several categories. Money, of course, was a common need, mentioned in all areas except student skill with applications. Professional development was mentioned under all four factors. We did not ask about how to do professional development, but others have identified time as a barrier to faculty learning new technology skills and integrating them in to instruction (Strudler, et al., 1995, p. 19). In the present survey, time was mentioned (although not specifically tied to professional development) under all factors except student applications skills.

In 1998, we noted that, while many institutions were proud of their technology course offerings, there was little correlation between the courses and the reported levels of integration, student skills, or other factors. In 1999, the high-rating respondents held technology courses in high esteem as a way to build student skills, although they were rarely mentioned as contributing directly to integration or field experience.

When we looked at the original 1998 surveys for these respondents only, we found that a higher correlation did exist between required technology course work and three of the other factors (Table 14). It is interesting to note that student computer skills—which were linked to technology courses in the 1999 narrative responses—composed the one factor that did not correlate well with course work on the 1998 survey.

Table 14. Correlations Among Main Factors and Course Work, 1998 and 1999 Surveys

	Faci	lities	Integ	ration	Applio	cations	Field Ex	perience		nology irses		ed Tech. ining
_	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999
Facilities	1.0	1.0										
Integration	.41	.39	1.0	1.0			gradija dijed Rođeni Sad					
Applications	.44	.28	.62	.59	1.0	1.0						
Field Experience	.35	.53	.52	.38	.34	.27	1.0	1.0				
Technology Courses	.16	.35	.17	.24	.11	.52	.16	.28	1.0	1.0		
Integrated Tech. Training	.18	.43	.33	.35	.19	.05	.23	.49	.20	.15	1.0	1.0

It would seem that the role of technology course work is not primarily to boost student skills in word processing and other applications. As we noted in 1998, students gain technology skills from a variety of sources. Rather, the course work in these high-rating SCDEs probably is most valuable in supporting the integration of technology in the rest of the activities. Presumably, in these high-capacity SCDEs, there is more technology to teach, and more opportunity to apply what is taught.

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The 22 high-rating respondents were no more likely than the rest of the original sample to have large numbers of course hours. (Three to four quarter hours was the median number of credits for both samples in both technology-specific course requirements and technology training integrated in to other course work.) However, the course hours seemed to be more related to the rest of the program.

Money, time, and course hours can all be quantified, budgeted, and scheduled. One of the important drivers of technology use mentioned by our respondents is harder to pin down—commitment. Our survey did not ask how SCDEs fostered commitment to technology innovations, but some of the respondents provided clues. One noted that commitment took the form of appointing a vice president of technology. Another reported the administration began requiring technology be included in faculty evaluation plans. In contrast to these top-down commitments, two sites reported that students voluntarily raised their own fees to support technology. Another respondent recounted how he and his colleagues made a presentation before their trustees to gain support for technology. The common thread in these comments seems to be the role of human initiative, facilitated by administrative actions and access to information. It suggests that supporting the innovation actually means supporting the innovators.

#### References

Barron, L. C., & Goldman, E. S. (1994). Integrating technology with teacher preparation. In B. Means (Ed.), *Technology and education reform* (pp. 81–110). San Francisco: Jossey Bass.

Moursund, D., & Bielefeldt, T. (1999). *Will new teachers be prepared to teach in a digital age?* Santa Monica: Milken Exchange on Education Technology.

Strudler, N. B., McKinney, M. O., & Jones, W. P. (1995). Integrating technology into teacher education courses. *Journal of Computing in Teacher Education*, 11(3), 15–20.

# Appendix:

# Information Technology in Teacher Education 1999 Capacity Questions

- 1. We're interested in knowing more about how you achieved the high levels of capacity you reported in 1998. Please tell us what you consider to be the key elements that ....
  - 1.1.1 Helped your institution provide technology facilities for students and teachers.
  - 1.1.2 Hindered your institution in providing technology facilities.
  - 1.2.1 Helped faculty and students integrate technology into classroom practice.
  - 1.2.2 Hindered faculty and students from integrating technology into classroom practice.
  - 1.3.1 Helped your students achieve proficiency with word processing, e-mail, the World Wide Web, and electronic gradebooks.
  - 1.3.2 Hindered your students in achieving proficiency with word processing, e-mail, the World Wide Web, and electronic gradebooks.
  - 1.4.1 Helped your institution provide technology-related field experiences for students.
  - 1.4.2 Hindered your institution in providing technology-related field experiences.



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- 2. In our 1998 survey, higher numbers of IT-specific course requirements did not correlate with higher reported capacity in other areas. In your opinion, what is the role of required computer courses in training new teachers?
- 3. Postsecondary students acquire their technology skills from a variety of sources. Please rate these sources of technology training as to how important each is for students in your program. Use the following scale:

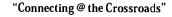
1=Unimportant; 2=Moderately useful; used 3=Important; used by rarely used by some students 3=Important; used by most students most students

Source of training	1	2	3	4
Technology courses within the education program.				
Technology courses from outside the education program.				
Technology training integrated into other education coursework.				
Technology training integrated into other non-education coursework.				
Prior training in high school or community college.				
Informal learning from peers or self-study.				
Other (describe):				

4.1 In your opinion, how essential is a formal technology plan to implementing information technology in teacher education?

1: Not needed	2: Not essential, but useful	3: Very important	4: Essential

4.2 In your opinion, what are the key characteristics of a useful technology plan?





Research Paper: Connecting Technology to Teaching and Learning

# Active Learning Strategies in Computer Graphics

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Key Words: active learning, aesthetics, OpenGL®, ray tracing

#### **Abstract**

In this paper, active learning models are applied to computer graphics. Lectures are augmented in real time with student activities, inquiry-based reasoning, and other methods of initiating student contribution to the learning experience. This approach promotes a more comprehensive, deeper, and more memorable understanding of the theory, principles, and methodologies of computer graphics. A progression of such activities is presented as they are applied in the course.

#### Introduction

The classical model of lecture-homework-exam does not meet the challenge of contemporary students. When competing with mass media and other forms of information delivery, a verbal lecture does not leave enough sensory impression. Likewise, even what students read in a passive framework is barely remembered, less so in pre-examination cramming. Weaker students have difficulties in reading, most notably with abstract and mathematical concepts. These problems are magnified in computer graphics, where mathematical expressions/structures and programming projects may prove too formidable.

The solution to these problems requires a radically different approach to lectures, homework, and projects. Lectures should involve periodic breaks in which students perform activities that reinforce the concepts being inculcated. The activities should be simple at first and based upon student experience or a familiar context. In the beginning, this may mean giving the students programs with which to experiment rather than expecting that they write the code.

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#### Foundations and Aesthetics

At the earliest stages, students need to understand the concepts of color and resolution, especially appreciating their effect on the images generated. To achieve that, a useful exercise is to have students download sample GIF or JPEG images and view them in a standard imaging package such as Photoshop® or LView®. There are many such packages in the public domain. Next, have the students magnify the images to see the inherent pixel nature of the image. Another useful exercise is to have them view the photograph at 4, 16, 256,  $\sim$ 65,000, and 16 million colors. They quickly recognize the associated information content. Have them save the files at each step. They directly see the "space complexity" measure by looking at the file sizes. To demonstrate the effects of compression, have students save an image as a bitmap (such as uncompressed TIFF).

These activities also prove useful when preceding a lecture on the hardware and history of computer graphics. Most students have little idea that the era of mainframe and minicomputer dominance involved little graphics beyond character-mode printed posters. Some may remember low-resolution four-color applications of the early 1980s. To best contrast this evolution, have them compare small, simple overview-perspective games with textured-bitmapped first-person three-dimensional games. Restrict this time period to at most five minutes, the goal being discernment, not frivolity. This can be followed by a discussion of the historical trends of graphics hardware during the 1980s and 1990s. The need for increasing memory model size, graphics memory, display resolution, CPU speed, and for coprocessors takes on a greater reality. The importance of the transition from two dimensions to three becomes apparent. Another useful exercise in hardware appreciation is to run several graphical programs (from the student assignments) with specialized graphic-instructional primitives utilizing the coprocessor, and then run those programs without them. A graphical simulation of raster scan operations would be useful but none are available.

To facilitate this initial experience-orientation, a textbook should introduce colorful samples of computer graphics early. Hearn and Baker (1997; the primary text used in this course) and Firebaugh (1993) provide numerous illustrations at this stage.

# **Graphic Primitive Programming**

Programming in computer graphics often begins with designing a line-draw function from a single-pixel dot function. One useful exercise is to hand out graph paper and have students "x"-out boxes to draw lines. They easily accomplish this for drawing y=x and y=0. At y=(3/7)\*x and y=(1/4)\*x, serious problems become evident. At this point, they are ready to code a simple incremental algorithm (such as digital differential analyzer—DDA). After several runs, have students try their algorithm with y=100\*x. Students arrive on their own at the conclusion to switch the looping dimension depending on slope.

Bresenham's line algorithm requires even more preparation. One activity students enjoy is calculating. Using a spreadsheet package, have students compute intermediate numerical values that Bresenham requires and then use the chart facility to view the results. After this prototyping activity, students are generally more confident in proceeding to the program design stage.

Another useful exercise is for students to form teams, each responsible for a distinct algorithm for solving the same problem. In the circle-generating problem, each team has a different algorithm to program and they post their timing results on the board. This is also a good time to compare their results with those produced by a coprocessor's routine.



# **Two-Dimensional Programming**

The next exercise is to design a plotting routine for an arbitrary parametric curve in the plane (see Figures 1 and 2 for examples of parametric curves). A good first step is to have students research on the Web or in the library about particular parametric curves, such as hypotrochoids. After studying the curves and getting formulas for them, students insert those formulas in the plotter routine. This routine (only 25-30 lines of code) generates 1,000 points of that curve, computes the maximum and minimum values, and then scales and plots all points based on those maximum and minimum values.

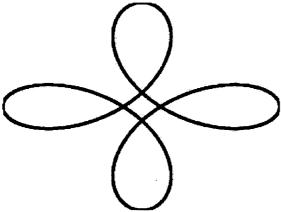


Figure 1. Standard parametric curve.

A bountiful source of several major families of parametric curves is Lawrence (1972). Introducing parametrics is important because of the decline in their coverage in a significant portion of modern calculus texts, despite their central role in several areas of computer graphics. They serve as a useful introduction to multivalued functions, broaden student understanding of piecewise linear graphics in the plane, and have applications in simulation.

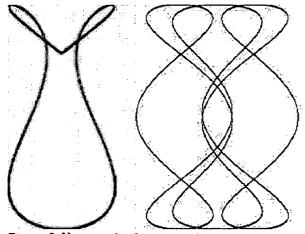


Figure 2. Nonstandard parametric curves.

The team approach works well with fill algorithms. In each team, one person supervises the trial drawings and the key logic therein. The second person converts the samples and reasoning into a program. A third person constructs test inputs; these inputs should adequately address problem situations and thoroughly test

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the code. Finally, the fourth person is responsible for debugging and testing. The debug phase often produces surprising results, the most amusing being fills that go beyond boundaries and inundate the screen.

Anti-aliasing models can be tested by editing an enlarged image and then reducing it to see the actual results at the normal scale. This is best accomplished with line segments since this activity requires some effort even for small segments; that segment can then be duplicated and concatenated to see the final results.

Transformations are easily experimented with; most image-processing packages have such options. At the stage of students programming transformations, the situation has some interesting side effects. When working with line segments defined by endpoints, the matrix transformations work well. However, when students run their transformation procedures on images, the side effects from rotations and scaling are quite shocking. The need for interpolation becomes acute.

Clipping algorithms can be covered by first providing some examples for the whole class to solve by hand on paper, providing the solutions when errors are encountered, and then forming teams for the actual programming. The problem in programming is that students often "visualize" the solution before applying the algorithms in the class problem-solving efforts. During the programming, no such global intuitions are available during execution. Teams of at least four are needed here; at least one student should concentrate just on the algorithm's steps, not the coding issues, to guarantee adherence to the method assigned. Roles of students in each team should be based on their decisions; to impose a rotation of functions on students often irritates them by blocking their opportunity to contribute in areas of their strengths.

# Three-Dimensional Wiring

The introduction to three dimensions requires an extensive review of vector and matrix operations. Intermix lecturing with student calculation exercises (see Figure 3).

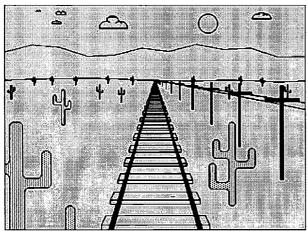


Figure 3. Early exercise in wire-frame, three-dimensional perspective calculation, depth cues, and random-image generation (desert scene).

It is beneficial to have students verify their results on a simple wire-frame modeling program. As they progress from the basics to the three-dimensional transformations, this visual verification becomes indispensable. Students should program short routines to read/construct and display polygon tables and quadrilateral meshes. They can then modify their two-dimensional transformation procedures to three



dimensions (a short activity). At this point, have the students modify their 1,000-point plotter in two dimensions to three dimensions and apply transformations to give perspective. The resultant surface plotter is quite an accomplishment.

Students consistently dread the spline representation. Having students generate sample cubics with their two-dimensional plotter routine helps them understand the versatility of this curve. A formal discussion of curvature and quadratic limitations will give some background but rarely convinces them as well. A computer-aided design (CAD) or drawing package with splines built-in is an effective way for students to visualize the effects of control points. After several proofs and many numerical examples, assign a different spline algorithm to each team. After computing coefficients, have students test their results by running the plotter routine on the spline and also plotting the data points.

# Solid Phase: Ray Tracing

Introducing a public domain ray tracer such as a Persistence of Vision™ Ray Tracer (POV-Ray) is an effective way to approach constructive solid geometry (see Figure 4). Students find the programming less pressured, can concentrate on concepts, and produce results too time-consuming to completely program otherwise. This approach was presented in Owen, Larrondo-Petrie, and Laxer (1994) and Schweitzer (1990). POV-Ray includes online interactive tutorials. POV-Ray code samples on the Web are abundant. Students develop a solid appreciation of three-dimensional positioning, perspective, lighting, color, and texture as they construct several scenes. Several books by Waite Group Press are complete introductions to ray tracing and animation with POV-Ray, most notably Young and Wells (1994) and Bowermaster (1994). Unfortunately, all of them are out of print but are worth borrowing through interlibrary loan with their CDs. The C/C++ code can interact with the user and then call POV-Ray routines to accomplish the task. One popular activity is to write recursive C code for a Lindenmayer system. This generates point and arc information, which is then rendered using POV-Ray. This may be a student's best opportunity to see the inherent power of recursion.

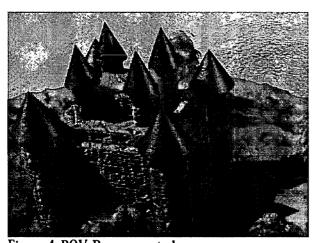


Figure 4. POV-Ray generated scene.

Ray tracing prepares students for actual C/C++ programming with depth, shadows, reflections, and other three-dimensional characteristics. Pedagogical exercises with folded paper models can serve as a prelude to algorithm design for binary space-partitioning (BSP) trees and hidden line removal. Bringing a flashlight and metal objects to class will illuminate during a lecture on normals, lighting, and reflection. By turning off the overhead lights and closing the shades, students can get a more dramatic and realistic view than any ray

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tracer could produce. This serves as an effective lab exercise. The mathematical model and subsequent C/C++ code follows.

One of the benefits of using C/C++ is that scene generation occurs in real time, so that if a bug occurs, students can predict and observe when the scene went bad. It is also more amusing watching objects and shadows get generated.

#### Fractals and Randomized Models

The simplest exercise in randomization (Monte Carlo methods) in computer graphics is to have students write a C/C++ program to generate a wire-frame grid and then use a random-number generator to raise or depress grid-points on that surface a random but carefully bounded amount (like wrinkling). This is an easy and short program, described in Pokorny (1994). Going a step further, have students use nonuniform random-number generators to produce different textures. As a final step, apply color variations depending on surface height. Applying colors carefully, one can achieve the effect of geological strata.

Another application of random numbers and colors is in producing cloud formations (see Figure 5). Using a random-number generator with a Gaussian distribution and applying shades of white on a blue background in cluster patterns, students can produce impressive results.

As an independent but not mutually exclusive methodology, fractals and space-filling curve generation also gives students an occasion to write functions in class that generate complex natural objects and scenes (see Figure 6). By putting more parameters in to this function (such as angles and length ratios), broad categories of fractals can be generated.

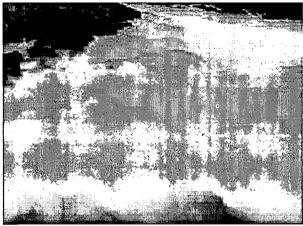


Figure 5. Cloud formation using random-number generators (compare with Figure 6).



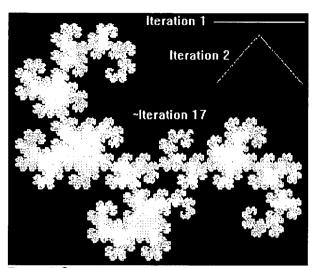


Figure 6. Space-filling recursive functions.

As an exercise prior to coding, students can download sample fractal programs, some quite professional, such as Fractint, from the Web and generate fractals with which to compare their own results. Hand drawing Koch curves also serves to motivate students.

#### Animation

The greatest obstacle to animation is student anticipation of greater effort being required. The idea of physical trajectories and producing frames/time-parametrized functions induces anxiety. To alleviate it, start with a programming exercise to draw a short horizontal line segment and then to erase the segment. Add a loop to the code to draw the segment farther to the right each time. To give an apparent smoothness of motion, have the loop not redraw the line segment but just delete one pixel on the left and add one on the right. This incremental approach "slides" the image.

The second animation exercise would be to write a function to draw a small car or, if students have learned file formats already, redraw a small scanned bitmap of a car. Combine this code with the previous nonincremental animation.

Another source of simple animations to demonstrate is the Web with its numerous animated GIF files. A frame-by-frame display of these can be accomplished by using any of several GIF-animation utilities (also on the Web). Students should be cautioned that these are often hand-drawn and are more akin to the mechanical cartoon arcades of the previous century or flip books than to computer graphics.

For nonlinear motion, a simplified solar system is an excellent programming exercise. One option is the practice in shading the planets as they move. Another optional modification is to add random periodic bumps on the surface and shaded boundaries to give the appearance of rotation and bumpiness.

At this stage, students are ready for the final project in animation. To encourage originality and imagination, several inspiring animations are demonstrated from the CDs of Bowermaster (1994) and Shatz (1993). SIGGRAPH also publishes CDs with exceptional animations but those are of higher caliber and often involve hardware and software that are not available to students.

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#### Other Resources and Issues

Books by Clifford A. Pickover (1990, 1991) provide very readable and well-illustrated expositions on topics including computer graphics. Unlike other popularizations, Pickover's include programming code. The Graphics Gems multivolume book series also provides short expositions that could be converted into exercises or projects.

Implementation support is always a consideration, but more so in computer graphics. Without 24-bit color, these activities would suffer; other less-pressing necessities are a robust combination of memory (more than 32 MB), graphics memory (more than 4 MB), and operating system (such as UNIX, Linux, or NT).

Since students are concerned about applicability of knowledge, we have recently shifted toward OpenGL as a standard. Since NT platforms are the student preference, a second text we require for the course is Wright and Sweet (1996). If NT is not a concern, a single compact text covering both computer graphics principles and OpenGL is Angel (1997). Finally, for those not using OpenGL but using X-Windows, Pavlidis's 1982 classic has been modernized (in 1996) and expanded with exercises concentrating on interactive, event-driven programming.

#### References

Angel, E. (1997). *Interactive computer graphics: A top-down approach with OpenGL*. Reading, MA: Addison-Wesley.

Bowermaster, J. (1994). Animation how-to CD. Corte Madera, CA: Waite Group Press.

Firebaugh, M. (1993). Computer graphics: Tools for visualization. Dubuque, IA: Wm. C. Brown.

Hearn, D., & Baker, M. (1997). Computer graphics (C version). Upper Saddle River, NJ: Prentice Hall.

Lawrence, J. (1972). A catalog of special plane curves. New York: Dover.

Owen, G., Larrondo-Petrie, M., & Laxer, C. (1994). Computer graphics curriculum: Time for a change? *Computer Graphics*, *28*(3), 183–185.

Pavlidis, T. (1996). *Interactive computer graphics in X.* Boston: Prindle, Weber, Schmidt.

Pickover, C. (1990). Computers, pattern, chaos, and beauty. New York: St. Martin's Press.

Pickover, C. (1991). Computers and the imagination. New York: St. Martin's Press.

Pokorny, C. (1994). *Computer graphics: An object-oriented approach to the art and science.* Wilsonville, OR: Franklin, Beedle, and Associates.

Schweitzer, D. (1990, February). Ray tracing: A means to motivate students in an introductory graphics course. *Proceedings of the 21st SIGCSE Technical Symposium on Computer Science Education, Washington, DC, 22*(1), 157–161.

Shatz, P. (1993). *Walkthroughs and flybys CD*. Corte Madera, CA: Waite Group Press.



Wright, R., & Sweet, M. (1996). *OpenGL superbible: The complete guide for OpenGL for Windows NT.* Corte Madera, CA: Waite Group Press.

Young, C., & Wells, D. (1994). Ray tracing creations (2nd ed.). Corte Madera, CA: Waite Group Press.

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Research Paper: Moving Beyond the Crossroads: Teachers as Agents for Change

### **Goals 2000: Initial Evaluation**

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Key Words: Goals 2000, integrating technology, teacher training

#### Introduction

The following is an evaluation of a Goals 2000 project being carried out in a rural western school district. Project participants have embarked on a series of training modules designed to develop their skill with a variety of software applications and the integration of technology within the curriculum. Participants are receiving training and a new laptop computer with Windows® 95 for use in their respective jobs. Participants include administrators and classroom teachers.

An initial study was conducted in the fall to frame a benchmark for evaluating the success of the project in providing the teachers with the technical skills, knowledge, and motivation necessary to integrate technology within the curriculum effectively and efficiently. A follow-up evaluation was conducted the following spring. This is an ongoing project, so evaluations will continue to be conducted on a yearly basis.

# Methodology

Six questions formed the focus of this evaluation:

- 1. What technology related skills do participants in the project already possess?
- 2. What concerns do participants currently have regarding the integration of technology within the curriculum?
- 3. How are teachers currently using technology within the classroom?
- 4. At what Level of Use are participants in their current use of technology and its integration within the curriculum?
- 5. What technology related skills are students currently acquiring through their teachers' use of technology within the curriculum?



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6. What is the perceived impact of current technology use by teachers on students?

Data collected to answer these questions were obtained through the use of interviews with, and questionnaires completed by, participants in the project. Initially, 23 project participants were interviewed and completed the questionnaires: 2 school board members, 4 elementary teachers, 10 secondary teachers, and 7 administrators. In the spring follow-up, 14 participants were interviewed and completed questionnaires: 6 elementary teachers, 7 secondary teachers, and 1 administrator. The group that participated in the initial evaluation was not included in the spring evaluation. We were not prepared at that time to do a comparison group based on training, across the group. The district was well represented in this project with an administrator and at least two teachers from each building being included. Participants included educators who were already well versed in technology and others who had limited experience with technology. Participants ranged from 23 to 57 years in age, with the average age of the participants being 43; 57% of the participants were female and 43% male. Teachers ranged from first-year teachers to those with 31 years of experience.

The Concerns-Based Adoption Model (CBAM), a model developed in the 1970s to assess, facilitate, and evaluate the change process, served as the basis for this study. CBAM provides a strong tool for evaluating implementation efficiently and effectively. The diagnostic components of CBAM are designed to evaluate the change and adoption process, attending not only to the technical problems associated with the adoption of an innovation, but also to the personal perceptions of the potential adopter.

The CBAM model includes three diagnostic dimensions: (1) Stages of Concern (SoC), (2) Levels of Use (LoU), and (3) an Innovation Configuration Map (ICM). The Stages of Concern questionnaire (SoCQ) and Levels of Use interview were used in this evaluation. The Stages of Concern questionnaire was used to assess the intensity of the feelings and perceptions that the participants held in relation to the integration of technology within the curriculum. (Alpha coefficients on the SoC questionnaire range from .64 to .83, and test-retest correlations range from .65 to .86.)<sup>1</sup> The Levels of Use interview was used to assess where participants were in their current use of technology and its integration within the curriculum. (The LoU interview has a 98% correlation with observation.)<sup>2</sup>

After completing the Stages of Concern questionnaire, participants were asked to respond to the open-ended question "What are your concerns about integrating technology into the classroom?" The question was used to clarify the concerns expressed by project participants.

In addition to these diagnostic procedures, participants were asked to complete two additional questionnaires: an impact survey and a self-assessment of their skills with computers and application software. The impact survey contained questions regarding the effect of current technology integration within the curriculum. The statements participants were asked to respond to addressed the quality of student work, learning behaviors, teaching with technology, communication with parents and students, interactive classroom organization, student technology skills, and student interaction. The purpose of the survey was to assess the participants' perceptions of the effect that their current use of technology is having on student learning, the development of technology skills by students, student achievement, and teacher pedagogy.

The self-assessment contained specific questions regarding a variety of technology skills: computer operations, word processing, operating systems, spreadsheets, databases, computer graphics, desktop



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<sup>&</sup>lt;sup>1</sup> Hall, G. E., George, A., & Rutherford, W. (1986). *Measuring stages of concern about the innovation: A manual for the use of the SoC questionnaire.* Austin: The University of Texas at Austin, Research and Development Center for Teacher Education.

<sup>2</sup> Hall. G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* New York: State University of New York Press.

publishing, telecommunications, and multimedia. The self-assessment was used to assess the participants' current skill with these technology applications.

## **Data Analysis**

The data collected from each of these assessments were analyzed using a combination of quantitative and qualitative methods. A comparison of means was used to analyze the scores obtained from the SoC questionnaire. The LoU interviews were scored using a rubric created by the developers of the Concerns-Based Adoption Model.<sup>3</sup> A frequency count was used to analyze the responses to the impact questionnaire. Means calculated within each skill area were used to analyze the self-assessment. The data obtained from individual participants were compiled and comparisons made between their responses. Trends were identified and outliers explored in greater depth.

The information was also grouped according to the participants' roles in the district: administrator, elementary teacher (K-6), and secondary teacher (8-12). The data obtained from school board members were included with those obtained from the administrators, unless otherwise noted. The data obtained from the K-12 music teachers were included with those obtained from the secondary teachers.

#### Results

#### What technology related skills do participants in the project already possess?

The participants in this project, as a whole, have very limited technology skills. In the self-assessment questionnaire participants were asked to rate their ability—(1) no-knowledge, (2) limited knowledge, (3) some knowledge, (4) competent, and (5) expert—with the following technology skills: computer operations, word processing, operating systems, spreadsheets, databases, computer graphics, desktop publishing, telecommunications, and multimedia. Most participants rated themselves ranging from some knowledge to competent in response to the question "I know how to properly boot up, operate, and shut down the computer." But, otherwise, skills were limited in most areas (see Figure 1).

Administrators rated their word processing, operating system, telecommunications, and spreadsheet knowledge between limited knowledge and some knowledge. Their strongest skill area (see Table 1), word processing (2.83), was rated as having some knowledge. The administrators rated their skill level closer to no-knowledge in the other skill areas: computer operations, databases, computer graphics, desktop publishing, and multimedia.

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<sup>&</sup>lt;sup>3</sup>Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* New York: State University of New York Press.

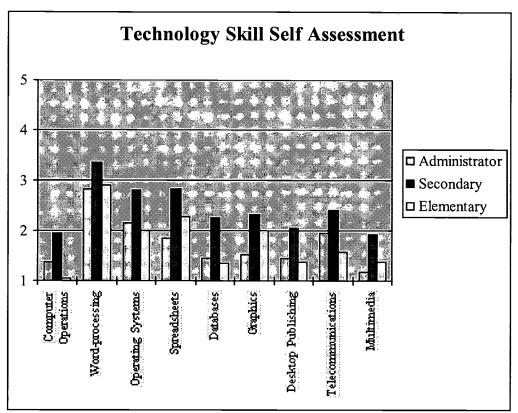


Figure 1. Technology skills self-assessment. Results are displayed by educator role.

Secondary teachers rated their level of ability in all skill areas between limited knowledge and competent. They rated their strongest skill areas (see Figure 1) between some knowledge and competent: word processing (3.34), operating systems (2.81), and spreadsheets (2.82). The secondary teachers rated their skill level closer to limited knowledge in the other skill areas: telecommunications, computer graphics, databases, desktop publishing, computer operations, and multimedia.

The elementary teachers rated their level of ability in spreadsheets, computer graphics, and operating systems between limited knowledge and some knowledge. They rated their word-processing skills as competent (2.89; see Figure 1). The elementary teachers rated their skill level closer to no-knowledge in the other skill areas: telecommunications, multimedia, desktop publishing, databases, and computer operations.

# What concerns do participants currently have regarding the integration of technology within the curriculum?

Initially, administrators had high Informational concerns and high Collaboration concerns. The one administrator interviewed during the spring meeting demonstrated lower Informational concerns. Informational concerns focus on a general awareness about integrating technology within the curriculum and an interest in learning more detail about the integration of technology. Collaboration concerns focus on the coordination of activities related to the integration of technology with others. These concerns would seem to be appropriate for administrators. Board members had very much the same concerns.



Table 1. Technology Skills Self-Assessment Mean Ratings

* * * * * * * * * * * * * * * * * * * *	Administrator	Secondary	Elementary
Computer Operations	1.37	1.95	1.04
Word Processing	2.83	3.34	2.89
Operating Systems	2.14	2.81	2.00
Spreadsheets	1.85	2.82	2.28
Databases	1.46	2.25	1.35
Graphics	1.52	2.33	2.01
Desktop Publishing	1.45	2.05	1.37
Telecommunications	1.96	2.39	1.57
Multimedia	1.18	1.93	1.38

In the initial group, the concerns of the elementary and secondary teachers were more extensive. Elementary teachers had high Informational and Collaboration concerns, but they also had high Personal concerns. High Personal concerns indicate that the individual is uncertain about the demands of integrating technology within the curriculum and the individual's ability to carry out the task. This could include concerns about the reward structure in place for this project, decision-making matters and how they are being carried out, and potential conflicts with other areas of the job. Informational concerns were still high in the spring, indicating that the problems identified, because of lack of information, in the fall had not been addressed. Management concerns were also beginning to peak among the participants, indicating the participants were beginning to be concerned about how they would manage the use of technology within their classrooms. Participants continued to express Collaboration concerns with an additional emphasis on Refocusing concerns. The participants seemed to have ideas for refocusing their efforts on options other than technology that would enhance learning in the classroom. The elevated Collaboration concerns would indicate that the participants continued in their concern with coordinating their efforts with those of other teachers in their buildings. This could be emphasized because the schools included within the study offer specific technology classes during the school day in which classroom teachers are expected to collaborate with a technology teacher.

In the initial study, the secondary teachers, on the other hand, had high Personal concerns, high Collaboration concerns, and high Refocusing concerns. They were concerned that technology have a positive effect and not a negative effect. They were also wondering whether technology really is a solution; are there other means of teaching that would be better than technology? The group interviewed in the spring exhibited these same concerns. The secondary teachers demonstrated elevated concerns across the board.

The process of change can be more successful if the "concerns" of the individual are considered. The concept of concerns, in this instance, includes the participant's feelings, preoccupation, thought, and consideration toward the integration of technology within the curriculum. The participants in this project have strong Personal concerns and strong Impact concerns. They want to know how this will affect how and what they teach. They also want to know the potential effect on student learning. In their view, there cannot be any continuous effect unless there is continued support for this project beyond this initial implementation. Without funding for additional hardware and software, the training the participants will be receiving in these

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<sup>&</sup>lt;sup>4</sup>Hall, G. E., & Hord, S. M. (1987). Change in schools: Facilitating the process. New York: State University of New York Press.
<sup>5</sup>Hall, G. E., George, A., & Rutherford, W. (1979). Measuring stages of concern about the innovation: A manual for the use of the SoC questionnaire (Report No. 3032). Austin: The University of Texas at Austin, Research and Development Center for Teacher Education. (ERIC Document Reproduction Service No. ED 147 342)

workshops will be of limited usefulness. Additionally, they would like for this opportunity to be afforded to other faculty members, and, in their view, without continued financial support this will not be possible.

Primary among the participants' concerns is the availability of technology, additional funding, time to implement integration projects, time to learn the necessary skills, and technical support. One participant expressed the concern that "the technology that we currently have is not being used to its fullest capacity." The reason given for this view focuses primarily on training of faculty and staff. Once they have training, the participants are concerned that they will not have the necessary hardware and software to adequately integrate technology within the curriculum. Characteristic of this uncertainty was the following statement: "At this point in time, I feel quite unprepared and untrained to do much integrating for my students. In addition, I don't believe we have adequate equipment to be able to do a first-rate job of integrating technology. So, my question is, will we be able to obtain the equipment needed if we decide to integrate?" In relation to time and technical support, the following quote characterizes the participants' concerns: "Time. I am concerned about trying something new and exciting then experiencing glitches beyond my control which will waste valuable learning time." \*\*

#### How are teachers currently using technology within the classroom?

Currently, there is very limited integration of technology within the curriculum. Most integration is limited to using technology as a resource tool. Among the administrators, technology is primarily used as an administrative tool for preparing memos and administrative reports. One of the administrators, however, actively searches for Internet sites and other resources for the teachers in his building.

The integration of technology within the curriculum by teachers seems to be limited, to a great extent, by the availability of up-to-date technology within their classrooms. Those with only one computer in their room use the computer primarily as a resource tool for preparing for their classes. Several teachers go somewhat further and find Internet sites to enhance their lessons—either at home or on the classroom computer, depending on their access to the Internet.

Those with access to more than one computer utilized a variety of models: word processing by students, drill and practice, and the generation of products by students. Those using the computer for word processing by students were primarily using the computer as a tool for students to type their final products: reports, poems, and stories. Several teachers used the computer as a workbook that would give immediate feedback, providing students with further practice by using drill and practice computer programs. Finally, a couple of teachers designed specific assignments in which the students used computer software and the Internet to do research and eventually develop a product on the computer. Teachers who go to the extent of having students create products on the computer hold the view that by using the computer as a generative learning tool students will develop their higher-order thinking skills. These teachers also had easy access to three or more computers.



<sup>&</sup>lt;sup>6</sup>SoCQ 3925

<sup>&</sup>lt;sup>7</sup>SoCQ 1768

<sup>&</sup>lt;sup>8</sup>SoCQ 6421

# At what Level of Use are participants in their current use of technology and its integration within the curriculum?

The Levels of Use construct provides a key ingredient for understanding and describing the implementation of an innovation. Levels of Use focuses on the behaviors that are or are not taking place in relation to the innovation. Typically a person will move in sequence from Level of Use 0, Non-Use, to Level of Use IVA, Routine, assuming that the innovation is appropriate, the leader and other change facilitators fulfill their roles, and time is provided. The first use of an innovation tends to be disjointed and erratic. Most new users cling to the users guide and concentrate on the day-to-day uses more than considering long-term uses. Hall and Hord indicate that individuals typically remain at the Mechanical level for an extended period of time. As the user becomes quite experienced, they move in to Level of Use IVA, Routine. Once users reach a Routine Level of Use they typically fall in to a comfortable pattern for using the innovation. As users move toward the higher Levels of Use—IVB, Refinement; V, Integration; and VI, Renewal—adaptations are intended to improve the effectiveness and positive outcomes from using the innovation. The focus is now on increasing effects with students.

The participants in this project ranged in their Levels of Use from that of a Non-User, orientation perspective, to that of a teacher who was working to integrate her use with that of other teachers in an effort to increase the effect of the integration of technology on her students.

The administrators were primarily at a Mechanical Level of Use, still working their way through the idea of integrating technology within the curriculum and developing their own skills to the point where they feel comfortable using the technology that is available to them. One administrator was at LoU IVA, Routine. The administrator was comfortable with his current use of technology and was not, at that time, looking to change how he was using the computer. His use of technology centered on administrative word-processing and using the Internet as a means for accessing the news. Another administrator was at LoU IVB, Refinement. This administrator spent a good share of time looking for resources, software, and Internet sites that would help teachers in his building increase the effect of technology on student learning.

The school board members who participated in this study were dichotomous in their use of technology. One board member was active in the use of technology as an administrative tool for business purposes. The other board member was a Non-User, preparing to learn how to use technology.

The secondary teachers ranged from a Non-User to teachers who had already reached a Routine Level of Use or who were refining their current use so that they could have a greater effect on their students. One of the secondary teachers actively uses the three computers available to her to teach the content to her students. She utilizes the Internet for student research, runs tutorial programs to help her students further develop their skills, and develops projects for the students to complete on the computers. Another teacher uses the nine computers available to him as a supporting piece for one of the units he teaches. When students use the computers it is primarily for the purpose of drill and practice or to complete spreadsheet exercises outlined in the text. Access to the computers is limited to keep students from playing games on the computers.

The elementary teachers ranged from a Non-User to one who was working with other teachers, collaboratively, in order to have a greater effect on her students. One of the elementary teachers used AlphaSmart®, to which her students have access, for students to type the final draft of their writing. The writing is then uploaded to the computer and printed out. This particular teacher is striving to learn all she

<sup>&</sup>quot;Connecting @ the Crossroads"



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<sup>&</sup>lt;sup>9</sup> Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* New York: State University of New York Press. <sup>10</sup> Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* New York: State University of New York Press.

can to increase the effect of technology on her students, including working with other teachers to enhance the learning process. She is at an Integration Level of Use (V). But other elementary teachers were at a Mechanical Level of Use (III).

# What technology related skills are students currently acquiring through their teachers' use of technology within the curriculum?

A majority of the participants said that students were learning how to use computer application programs because the teacher was integrating technology within the curriculum. When questions regarding the use of application programs were framed in the statement "Because of my use of technology in the classroom," 74% (71% spring) of the participants said that students could use a word-processing program and 70% (93% spring) said that students could print their own documents. Only 52% (50% spring) of the participants said that students could use a database. Fifty-seven percent of the participants said their students could use HyperStudio® in the spring, compared with only 43% in the fall. The use of other application programs was not perceived to be as strong (see Table 2).

Table 2. Percentage of Participants' Perception of Student Technology Skills

Application Program	l'all	Spring	
	Students Can Use		
Word Processing	74%	71%	
Print Documents	70 <del>%</del>	93%	
Databases	52%	50%	
HyperStudio	43%	57%	
Spreadsheets	39%	43%	
PowerPoint®	17%	7%	

# What is the perceived impact of current technology use by teachers on students?

Participants were asked to respond to a variety of impacts that have been identified as being a result of integrating technology within the curriculum. The initial group of participants in this project did not strongly agree or agree with very many of the 76 phrases presented to them. Those interviewed in the spring maintained a more positive attitude. This may be the result of a year's worth of work or a difference in attitude promoted by the training provided. These phrases represented impacts on the quality of student work, learning behaviors, interactive classroom organization, teaching with technology, student interaction, and communication. Table 3 details those phrases in which more than 50% of the participants strongly agreed or agreed with the statement. Each area covered by the impact survey is represented in Table 3. Participants agreed with other statements included in the survey but not to the level identified in the table.



Table 3. Responses to Phrases Concerning the Use of Technology in the Classroom

Because of my use of technology in the classroom:	Fall	Spring	
The state of the s	Strongly Agree/Agree		
Quality of Student Work	<u> </u>		
Students take more interest in learning.	48%	79%	
Students stay focused on learning for longer periods of time.	39%	71%	
Students demonstrate more independent learning.	70%	64%	
Students use technology to support higher levels of learning.	48%	79%	
Students are learning the content in greater breadth.	30%	79%	
Students express interest in topics being studied.	52%	71%	
Learning Behaviors			
Student work demonstrates more creativity.	48%	86%	
The complexity of students' work has increased.	43%	71%	
Students express original thoughts related to classroom topics.	35%	71%	
Students are adding relevant information to the classroom	39%	71%	
discussion.			
Interactive Classroom Organizat	ion		
I plan more hands-on and cooperative learning activity.	52%	43%	
Technology has allowed me to increase the degree of student	52%	64%	
involvement.			
Teaching with Technology			
I have learned to use a new technology teaching tool.	52%	64%	
The computer has become a learning tool in my classroom.	52%	71%	
I have found that my enthusiasm for teaching has increased.	43%	71%	
I am able to make content more relevant to students (real world).	65%	64%	
I have greater access to outside resources.	70%	71%	
I now allot more class time to hands-on learning activities.	48%	64%	
I use the computer as a learning center in my classroom.	52%	57%	
Technology has increased the reliability-validity of information	57%	57%	
available for me to use in instruction.			
Student Interaction			
Students are encouraged to participate in peer tutoring.	48%	79%	
I use my students as a resource for working with the computer.	65%	64%	
Communication			
I communicate personally with other teachers at my school more.	52%	36%	

# Summary

The participants in this project have limited technology skills, and the integration of technology within the curriculum is not happening, except on a very limited basis. The majority of the integration techniques that are being used have the possibility of a very limited effect on student learning and on how students are being taught. Hence, the participants have a very limited view as to the effect that technology is having on their teaching and their students. Only a few teachers are currently striving to make technology an integral part of

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student learning by having students use the computer as a generative learning tool, creating real-world products and participating in real-world simulations.

The administrators participating in the project have limited technology skills and are only at a Mechanical Level of Use with the skills that they do possess. The secondary teachers possess greater skill with the technology but their use is limited. They are primarily using the computer as a resource, and that, at a Mechanical Level of Use. Elementary teachers have a limited skill with the technology but are striving to use the technology for more than a resource. They are limited, however, in their use, beyond students doing word processing, by their lack of knowledge and lack of access to technology.

Of greatest consequence are the concerns expressed by the participants. Many of the participants feel that they are being pressured by the administration to change computer operating platforms. This has proven to be a major block in the dissemination of the project. This was discussed after the interviews conducted in the fall, and it continues to be a block. The Information concerns of the participants have not been addressed. Participants need and want to be informed about the greater picture of this project. They want to know where the project is going. Is the long-term support available so that this project can continue? Are funds available to purchase the hardware and software necessary to effectively and efficiently integrate technology within the curriculum? Will technical support be available? Will training continue? These Personal concerns could greatly interfere with the participants' ability to take full advantage of this project. Their questions need to be answered.

#### Recommendations

Following are a series of recommendations made based upon our conversations with the project participants. Many of the participants had unanswered questions and unanswered concerns. All of these are potential roadblocks to the success of this project.

- 1. We recommend that *an informal meeting* be held with the educators participating in this project. At this meeting the following issues need to be discussed:
  - What is the "phase-in" approach for this project?
  - What are the plans for expansion? Who is getting what? When? What are the plans for continued funding support by the district?
  - Where is this project going?
  - What is the time line for training? What will be taught?
  - How will the participants know when they are finished with training?
  - Integration training? When, where, how?
- 2. Share the vision with the participants. Allow time for teachers who are currently integrating technology within the curriculum to share some of the activities they do with their students. Either provide time in a meeting for a group "show and tell" or, better yet, provide teachers release time to actually visit classrooms that are currently integrating technology.
- 3. Address the platform issue. There seems to be quite a bit of strife over the mandated shift from Macintosh® computers to Windows-based computers. A compromise needs to be reached. Perhaps the model that has been implemented in Glendo could be followed. All Macintosh computers have been moved to the middle school and the new PCs are going in to the high school. It is very possible to run Macs and PCs on the same server—Novel and NT both allow this and it is not too difficult.



- 4. Address "access" concerns —all the training in the world is of no use if there are not computers for the teachers to use, with students, once they have gained the skills.
- 5. Provide integration training on how to work within the realm of the *one-computer classroom*.
- 6. Gain further community support by *informing parents* about the project that is being implemented.

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Research Paper: Connecting Technology to Teaching and Learning

# eEducation: Interdisciplinary Crossroads

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The world of e-business is percolating so far up into every field, said General Motors Vice President and CIO Ralph Szygenda, that he expects every graduate that walks into his office looking for a job to have e-commerce knowledge—both about the nuts and bolts of the technology and the business understanding to go along with it. (Vaas, 1999, p. 69)

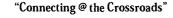
#### Introduction

It is 1974. Ohio State University has just published *Making Toys through Teamwork*. As fifth- and sixth-grade students manage their toy companies, they not only learn the techniques of wood construction and mass production but also inductively develop an understanding of marketing principles.

It is 1980. Seymour Papert polishes his final draft of *Mindstorms*, advocating a constructionist approach to education, in which learners construct knowledge by solving reality-based problems, exploring the limits of their own understanding.

It is 1990. Tim Berners-Lee prepares to introduce the world to the World Wide Web, an event that inadvertently begins to rewrite the rules of how marketers interact with their customers.

It is February 1999, and the confluence of these three events is about to change the way students at a small New England college think about marketing, technology, and their role in enterprise.





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This paper presents the framework we used in implementing Marketing on the Web, an interdisciplinary course that integrates marketing and technology strategies. We have grounded our approach in cognitive psychology (Piaget, 1967, 1970; Rumelhart & Norman, 1978) and in constructionist theory (Papert, 1980, 1993, 1996). While we have applied the framework at the undergraduate college level, it may profitably be adapted to other levels, primary through graduate.

The course is co-taught by two faculty: one from computer information systems (CIS) and one from marketing. It is designed to provide a unique opportunity for students to build on and integrate the concepts and skills acquired in prior semesters. It affords students an opportunity not only to expand and extend their Web development skills but also to understand that they must be applied in a directed manner if they are to be of value in solving business problems. Marketing concepts come alive as students, no longer constrained to studying theory and analyzing the work of others, become active participants. Experimenting, creating, revising, discussing, publishing, and reflecting on works of their own, they understand theory through action and experience the business value of technology through its application. In an environment made possible only through an interdisciplinary approach students are getting an eEducation.

# **Conceptual Foundation**

In 1980 Seymour Papert championed the superiority of "learning by doing" in *Mindstorms: Children, Computers and Powerful Ideas*, which laid out a conceptual framework for how computers could be used in education. He termed his approach *constructionism*<sup>1</sup>. These ideas were later expanded in *The Children's Machine* (1993) and *The Connected Family* (1996). Papert's thesis is that "old" ways of learning were artifices of the available technology—books, teachers to lecture, paper, and pencils. Computers, he suggests, allow people to learn in a more innate fashion. He argues that this internally driven learning, in which people learn "what they need to know in order to carry things out," is a superior educational process. Following this model, the role of the teacher is to create the conditions for discovery rather than to provide ready-made knowledge (Papert, 1996, p. 45).

Papert articulated the concept in a 1983 speech in which he draws a distinction between teaching and learning.

Teaching denotes a kind of fluidic theory of learning in which litres of knowledge fluid are transferred from the teacher vessel to a student vessel. We have this notion of the student being filled up from the wise container known as the teacher. I always like the [term] learning because learning denotes the process that is happening in the learner. I think what we really want to happen in education is to get that process energized and going because then the learners can function as they must for most of their life without depending on an explicit teacher. (Harper, 1989, p. 62)

Active learning is the hallmark of Papert's constructivist theory. His basic insight on the potential of active learning is the principle behind the phenomenon observed by Ohio State a quarter of a century ago as well as the one we employ in Marketing on the Web. As students do marketing they learn marketing. Active learning has been a recognized educational goal within the educational community for some time. Teachers have tried various approaches to experiential learning in the university classroom including the use of creative questioning techniques (Hallgren, 1982), data collection and analysis projects (McCorkle, Denny, Diriker, & Alexander, 1992), participatory examinations (Graham, Graham, & Whiting, 1997), as well as case analyses and research projects. While these are effective improvements to a straight lecture/discussion format, none provides the constructivist learning environment advocated by Papert.



# **Instructional Strategy**

Papert's model was based largely on the work of Jean Piaget (Harper, 1989), who coined the phrase, "to understand is to invent" (Papert, 1996). Piaget advocated an environment that stimulates the learner to build his/her own intellectual structures through planning, estimation, interaction, experience, revision, and extension (Watts, 1989).

Papert's and Piaget's ideas have been extended by other researchers interested in learning and curriculum design. Two are of particular interest for this paper. Marzano (1992) employed constructivism as a basis for developing curriculum planning principles, which he termed "dimensions of learning." Reid, Forrestal, and Cook (1989) were interested in articulating the phases of successful collaborative learning projects. Table 1 presents these approaches side by side. We found that patterning our course around the five instructional principles suggested by Marzano and Reid et al. does indeed create an effective active learning environment. Further, the interdisciplinary nature of the course significantly promotes the constructivist goal of allowing students to create their own knowledge structures. The following five sections provide the explanations.

Table 1. Constructivist Theory and Two Applications

Piaget/Papert	Marzano (1992)	Reid et al. (1989)
-	Dimensions of Learning	Collaborative Learning Phases
	Attitudes and Perceptions About Learning (Motivation)	Engagement
Planning and Estimation	Acquiring and Integrating Knowledge	Exploration
Interaction	Extending and Refining Knowledge	Transformation
Experience	Using Knowledge Meaningfully	Presentation
Revision and Extension	Productive Habits of Mind	Reflection

#### Motivation: The Engagement Phase

When the consumer looks at a Web page or a banner, the information that is presented there is processed by the human mind in several separate stages. Each of these stages is like a gateway. If the information does not make it past a stage, it is lost and the consumer has not been impacted by it.... The stages are (1) exposure, (2) attention, (3) comprehension ... (Hofacker, 2000, p. 47)

As any teacher can attest, the perception process (previously outlined by Hofacker) employed by marketers and communication experts applies equally well to the learning process. Exposing students to a problem is not enough; you also have to get their attention. For students to engage in active learning they must be inspired to solve a problem—ideally they should be absorbed by it. Students may view problems as engaging because they are novel, difficult, paradoxical, relevant, and the like. The opportunity to display their results on a Web page may in itself provide the required motivation (Abita, 1999; Batty-Hotz, 1999). But not everyone finds the same problems compelling. How does one choose problems that will appeal to each member of an entire class?

The importance of presenting authentic, relevant problems has been emphasized by teachers across specific subject areas including computer applications (Lowther, 1999), writing (Romano & Romano, 1999), science,

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and business (Joyner & Pedersen, 1998), as well as in the general curriculum (Norton, 1999; Williams & Merideth, 1997). Following the Piagetian model, we would add that allocating some portion of the problem domain to the students themselves greatly enhances the probability of each student finding a problem compelling. We recently gave students in Marketing on the Web the task of developing a Web site for a small candy producer. One group centered on the sexy, romantic image associated with the exchange of candy, while another focused on the stereotypical busy executive whose main concern is minimizing the time required to schedule the reliable delivery of candy for special occasions. Both groups presented their problem statement with zeal. Each had taken ownership of a problem it wanted to solve.

It is worth noting that students, for the most part, do not seek out easy problems. As Papert points out, "Most dislike of school work comes from finding it boring, the exact opposite of finding it too difficult. *Children*, *like everyone else*, *don't want 'easy'-they want 'challenging' and 'interesting'-and this implies 'hard'"* (Papert, 1996, p. 52; emphasis in the original).

A side effect of giving students the freedom to explore the problem space is that they regularly bring fresh perspectives to the subject. We often found ourselves thinking, "Wow, how'd she think of that ... I couldn't do that!" Why couldn't we? Probably because we are too familiar with the subject. If you want to know about pebbles ask a two-year-old. To us they're gravel—to a two-year-old they're fascinating.

#### Acquiring and Integrating Knowledge: The Exploration Phase

Having explored the *problem* domain students begin to explore the *solution* space. To select a solution strategy they need information. Students also need to consider how a decision made in one area will affect other areas. If they design the site to enable direct sales, for example, what technological requirements does that decision entail? What effect will it have on their dealer network? Is the company equipped to handle direct orders, returns, and billing? Knowledge becomes active. Students seek out the information they need to solve the problem they defined.

In this exploration phase the value of an interdisciplinary course is most conspicuous. To be successful, students have to think beyond their current perspectives to incorporate new ones. Students are asked to refocus, to view a business problem from a new, broader enterprise perspective. CIS majors add marketing insights to their technological expertise; marketing majors learn to incorporate technology strategies in to their planning procedures. This process is difficult. Students have to make the conscious effort to create cognitive space for the new material. If accomplished successfully, the end result is a more sophisticated perspective. As Anderson suggests, "Schema change is the 'sine qua non' of the acquisition of knowledge as opposed to the mere aggregation of information" (1977, p. 430). Put more prosaically, the student now begins to see the elephant, not just the trunk (or the foot, or the tail . . .).

## Extending and Refining Knowledge: The Transformation Phase

As students begin to design their Web sites, controlled environments with which customers interact, they must transform their knowledge and theories into reality. Following the Piagetian model, the best place for this transformation to take place is an intellectual playground, a responsive learning environment they can explore and extend. The microworld of a Web site provides this environment. It furnishes a set of primitives (text, graphics, sounds, data, bandwidth) and a set of constructs for organizing and acting on those primitives (hypertext markup language [HTML], pages, tables, frames, hypertext links, animations, forms). To this we add a set of marketing constructs. Students use these elements to create (invent) environments uniquely their own. Their creations reflect the goals they have established for their sites and their own



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individual styles in reaching those goals. Their success depends largely on the interplay between CIS and marketing concepts. Students constantly have to ask themselves questions such as "What other techniques and technologies might we use in constructing this Web site?" and "How will the target market react to a site that requires them first to download and install a Shockwave Plug-In?"

Throughout the course each Web site is always a work in progress. As students are exposed to new concepts and techniques they revise and extend their world to incorporate the new elements now at their disposal, thereby completing the constructivist loop. Feedback is ultimately provided at several levels. In this phase it is provided by the Web directly to the individual or group developing the site—does the site look and behave the way the student wants it to?

#### Using Knowledge Meaningfully: The Presentation Phase

Students are now ready to test their knowledge with a wider audience. As every teacher knows, we never learn a subject quite so well as when we have to explain it to someone else (Papert, 1993, p. 162). This same principle applies in a constructivist classroom. Students not only need to expand, modify, and build their knowledge structures, but they also have to be able to *communicate* that knowledge.

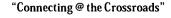
We facilitate this process by developing a critical ethic in the class, providing a second level of feedback. Beginning with the first week of classes, students critique each other's work orally. To discuss and comment on the effectiveness of their work, students must reflect on the criteria and standards of good marketing and good Web design. What is the apparent target market for the site? Does the intended message agree with the apparent one? Do animated GIFs enhance or detract from the site's purpose?

A third level of feedback comes from the instructors. We function as coaches, suggesting other areas the team may want to consider and helping students with difficult concepts. As much as possible, however, we try to avoid what Papert (1993) refers to as the intolerant insistence on "right" answers. Instead of pushing students to get it "exactly right" the first time, we adopted Papert's approach of helping students get it "vaguely right," so that there is room for them to redirect their efforts. The microworld of a Web site greatly facilitates this process. Students can easily try out different approaches, make changes and alterations—even completely change directions—in response to their own ideas and the critiques of classmates.

#### Productive Habits of Mind: The Reflection Phase

The constructivist philosophy is attractive because it engenders learning independence in students. As they take responsibility for their own education, they are also developing what Marzano refers to as productive habits of mind, mental processes that should stay with them throughout their lives, processes such as critical-thinking skills, an appreciation for learning strategies, and team skills.

The interdisciplinary nature of Marketing on the Web naturally leads to an environment that promotes the development of these processes. Reid et al. (1989) suggest that successful collaborative learning assignments must be complex enough so that a group with multiple perspectives and multiple knowledge sets is perceived to be better equipped to solve the problem than a group without these resources. A complex interdisciplinary problem would be of little value, however, if we were to allow the formation of homogeneous teams. Scholars have long known that heterogeneous groups render higher-quality decisions than homogeneous groups do (Fisher, 1980; Jensen & Chilberg, 1991). A diverse group brings different perspectives to bear on an issue. If group members are motivated to express their ideas and to listen to others, the result is a fuller consideration of a problem's complexities and alternative resolutions. We engender cross-fertilization by purposely





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balancing team membership so that neither CIS nor marketing majors dominate. Additionally, requiring that non-CIS majors explain the technology strategy and that CIS majors explain the marketing strategy during class presentations and critiques further engenders the exploration of alternative schema.

The complex interdisciplinary problem environment also fosters an appreciation for learning about learning. Success depends largely on the ability of each group member to assimilate the concepts and techniques of the "foreign" discipline. Much as a child with the latest video game wants to be the first on the block to master it, groups that find efficient means of cross-fertilization are the first to bear fruit. It is not that they are having so much fun that they don't know they are learning. Rather they see learning as a desirable goal and look for better ways to accomplish it.

We would also submit that an interdisciplinary course by its very nature adds an important collaborative layer: the interplay between the disciplines—in this instance marketing and CIS—which is personified by the collaboration between the instructors. We have found it helpful, for example, for the CIS professor to express the importance of supporting a Web site's development strategy with good marketing theory. CIS students seem to perceive his admonition not to overdo the whiz-bang of technology as more valid than when the same comment comes from the marketing professor.

#### The Obvious Question

At this point, the reader may be thinking, "If I divert class time to teach Web development (marketing), won't I have to cut out some of the marketing (Web development) content I cover?" There are two problems with this line of thinking. First, it assumes that marketing and computer information systems are separate and distinct disciplines. In the real world of enterprise development there is considerable overlap. The second problem, while less obvious, is just as important. It relates to the economic theory of roundabout production proposed by Böhm-Bawerk (1932) and Richard Ely (1902)—if your economics class had been constructivist-based you'd remember them!

Consider two tailors in the 1850s, about the time of Elias Howe, A. B. Wilson, and Isaac Singer. One decides to forego some current production and invest time and resources in one of those newfangled sewing machines (roundabout production); the other doesn't. The tailors quickly discover that he who invests in and applies the best tools wins. As the chair of the Utah Strategic Planning Commission observed in 1988, "Throughout history, every significant increase in human productivity has involved the better use of tools" (Thomas & Knezek, 1995).

Does this principle apply to education as well as economics? There is evidence that it does. Cutting (1990) provides an apt example. He was teaching Prolog programming to undergraduates who had no prior computer experience. To do useful work with Prolog, students had to understand the concept of *recursion*. Recursion is a difficult concept and a significant number of students were unable to master it in the allotted time. While Prolog relies on recursive techniques, it is not a particularly good tool for teaching them. Logo, on the other hand, is an excellent tool for teaching recursion. Cutting found that students who first learned Logo, followed by Prolog, were able to do more with Prolog than students who spent comparable total time on Prolog alone. By investing time to learn Logo he was able to cover more material, not less.

We suggest that the same principle applies to integrating Web development with marketing. Marketing provides a context-rich environment ideal for understanding how Web development theory and techniques can be applied in a business setting. Rather than simply developing a "cool" Web site, students develop an



appreciation for how technological expertise can add value to an organization's marketing strategy. Each discipline serves as an effective tool for understanding the other.

#### Conclusion

John Dewey (1916) once said that the goal of education is not just to acquire information, but to be able to apply it. His thoughts echo almost a century later in the comments of General Motors Vice President and CIO Ralph Szygenda in our introductory quotation. We suggest that if Dewey were alive today, he would very much favor an interdisciplinary eEducation.

An environment that motivates students to take an active role in the learning process, allows them to apply their newfound knowledge to real problems, and encourages them to push the limits of their understanding certainly is one that enhances education. Ohio State discovered this truth a quarter of a century ago with its Making Toys through Teamwork curriculum. Seymour Papert championed the idea almost 20 years ago. A decade ago Tim Berners-Lee developed a revolutionary new system for the exchange of information throughout the scientific community. In the process, he gave us not only a new medium for marketing but also a new environment, a technological playground for marketing theory, which makes it possible for us to realize Dewey's dream and meet Szygenda's expectations.

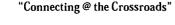
We are not alone in promoting the benefits of incorporating the Internet in to the classroom. What is different about our approach, however, is its interdisciplinary focus in which the technology is more than just a tool. Students learn the importance of developing a technology strategy consonant with an organization's marketing strategy.

#### Areas for Further Research

A course of this type has advantages beyond reinforcing, extending, and integrating concepts acquired in previous classes. Interdisciplinary courses would seem to be effective vehicles for *introducing* students to those topics as well. If true understanding comes from building complex intellectual structures with associative links among concepts, then students would benefit from being introduced to this process early in their educational careers. As with other learning environments based on constructionism, a course such as this one could be taught at a wide range of grade levels, from secondary school through college. Virginia's *Make It Your Business* curriculum for Grades 6–9 (*Guide to Marketing Course Competencies*, 1996) is one example. It appears to us that integrated courses could target Areas 3 (Conducting a Needs Assessment), 4 (Planning the Product or Service), and 5 (Preparing a Marketing Strategy) of that program. Would it fit in your curriculum as well? We would appreciate feedback . . .

#### Note

<sup>1</sup> Papert invented the term *constructionism* to distinguish his concept from that of Piaget. He says that "The name constructionism derives from an alternative model, according to which the learner has to *construct* knowledge afresh every time" (Papert, 1996, p. 45). He also notes that "my word will evoke the term *constructivism*, whose contemporary educational use is most commonly referred back to Piaget's doctrine that knowledge simply cannot be 'transmitted' or 'conveyed ready made' to another person" (Papert, 1993, p. 142).





#### References

Abita, L. (1999). *Educating teachers on Web-page building with students*. http://confreg.uoregon.edu/necc99/CDROM/proceeds/abita/proceed.htm (accessed September 13, 1999).

Anderson, R. C. (1977). The notion of schemata and the educational enterprise: General discussion of the conference. In R. C. Anderson, W. E. Spiro, & W. E. Montage (Eds.), *Schooling and the acquisition of knowledge*. Hillsdale, NJ. Lawrence Erlbaum.

Batty-Hotz, A. (1999). *Student-created Web pages and the state standards of learning*. http://confreg.uoregon.edu/necc99/CDROM/proceeds/batty/proceed.htm (accessed September 13, 1999).

Böhm-Bawerk, E. V. (1932). Capital and interest (W. Smart, Trans.). New York: Stechert.

Cutting, A. C. (1990). Logo before prolog. In E. Ellis (Ed.), *Proceedings of the National Educational Computing Conference*. Eugene, OR: International Society for Technology in Education.

Dewey, J. (1916). Democracy and education. New York: Macmillan.

Ely, R. T. (1902). Studies in the evolution of industrial society. New York: Chautauqua Press.

Fisher, B. A. (1980). Small group decision making (2nd ed.). New York: McGraw-Hill.

Graham, R. A., Graham, B. L., & Whiting, V. R. (1997). Cooperative learning: The benefits of participatory examinations in principles of marketing classes. *Journal of Education for Business*, 72(3), 149–152.

*Guide to marketing course competencies.* (1996). Glen Allen, VA: Virginia Vocational Curriculum and Resource Center.

Hallgren, K. G. (1982, March). An analysis of the relationship of teaching methodology and the students' level of cognition with student achievement in principles of marketing. Paper presented at the annual meeting of the American Educational Research Association, New York.

Harper, D. (1989). Logo: Theory and practice. Belmont, CA: Wadsworth.

Hofacker, C. (2000). *Internet marketing* (2nd ed.). Dripping Springs, TX: Digital Springs, Inc.

Jensen, A. D., & Childberg, J. C. (1991). Small group communication. Belmont, CA: Wadsworth.

Joyner, R. L., & Pedersen, J. E. (1998, February). *Hogs, sand, and fish: Building bridges between science and business.* Paper presented at Building Bridges to Tomorrow in Business and Marketing Education, Atlantic Coast Business and Marketing Education Conference, Raleigh, NC.

Lowther, D. (1999). *How to use basic computer applications to achieve higher-order learning*. http://confreg.uoregon.edu/necc99/CDROM/proceeds/lowther/proceed.htm (accessed September 13, 1999).

*Making toys through teamwork.* (1974). Columbus: Center for Vocational and Technical Education, Ohio State University.



Marzano, R. J. (1992). *A different kind of classroom: Teaching with dimensions of learning.* Alexandria, VA: Association for Supervisions and Curriculum Development.

McCorkle, D. E., Denny, E., Diriker, M. F., & Alexander, J. F. (1992). An involvement-oriented approach in a medium-sized marketing principles class. *Journal of Education for Business*, 67(4), 197–205.

Norton, P. (1999). *Timberlane tales: Problem-centered learning and technology integration*. http://confreg.uoregon.edu/necc99/CDROM/proceeds/norton/proceed.htm (accessed September 13, 1999).

Papert, S. (1980). Mindstorms: Children, computers and powerful ideas. New York: Basic Books.

Papert, S. (1993). The children's machine. New York: Basic Books.

Papert, S. (1996). The connected family. Atlanta, GA: Longstreet Press.

Piaget, J. (1967). Six psychological studies. New York: Random House.

Piaget, J. (1970). The science of education and the psychology of the child. New York: Grossman.

Reid, J., Forrestal, P., & Cook, J. (1989). *Small group learning in the classroom*. Portsmouth, NJ: Heinemann.

Romano, R., & Romano, J. (1999). *Multimedia software and language arts education*. http://confreg.uoregon.edu/necc99/CDROM/proceeds/romano/proceed.htm (accessed September 13, 1999).

Rumelhart, D. E., & Norman, D. A. (1978). Accretion, tuning and restructuring: Three modes of learning. In J. W. Cotton and R. L. Klatsky (Eds.), *Semantic factors in cognition* (pp. 37–53). Hillsdale, NJ: Lawrence Erlbaum.

Thomas, L. G., & Knezek, D. G. (1995). *Technology literacy for the nation and for its citizens* (Technology Literacy White Paper, ISTE Research Projects Reports). www.iste.org/Research/Reports/TechLiteracy.html

Vaas, L. (1999, October 11). University of IT. PC Week, pp. 69, 70, 75.

Watts, M. (1989). Cognitive/affective effects of Logo. In D. Harper (Ed.), *Logo: Theory and practice* (pp. 1–29). Belmont, CA: Wadsworth.

Williams, H., & Merideth, E. (1997). Dynamic blueprint for technology integration: Evolving structure, construction, and prototypes. *Proceedings of the National Educational Computing Conference*. www.wce.wwu.edu/necccd/necchtml/proceeds/williams/proceed.htm (accessed September 13, 1999).



"Connecting @ the Crossroads"

Research Paper: Connecting Technology to Teaching and Learning

## Web-Based Extended Learning through Discussion Forums

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Key Words: Web-based interactive learning, Internet, intranet, shared learning,

discussion board

#### Introduction and Rationale

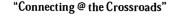
As the intranet/Internet is introduced in to the learning environment of the classroom today, the effects of this technological environment must begin to be studied. Technology offers an opportunity to affect and monitor academic behaviors such as problem-solving ability and metacognitive reflection. However, what evidence can be found that speaks to the effectiveness of the use of such learning places? Can a model for visualizing any level of effectiveness be generated for such environments?

As technology creates a virtual classroom environment as it moves to a Web-based space, questions arise regarding the effectiveness of such geographically unrestricted, collaborative problem-solving places (Jacobsen & Levin, 1993). Collaborative designs such as these become possible when the learning environment is placed within a Web of computers, thereby facilitating and encouraging access by many to a shared intranet/Internet Web-place.

As students use the collaborative capabilities of a networked intranet learning environment, thinking about their own thinking evolves, thereby increasing the opportunity to clarify misconceptions of knowledge, procedural or declarative. The science classroom presents one opportunity to study the effects of a shared intranet environment on student problem-solving ability and metacognitive reflection skills through shared contextualization. Field study data collection, posting, and discussion create a context, or anchor (Brown et al., 1989), for this virtual learning environment based on real, concrete information.

#### **Questions Researched**

As part of a secondary research question, an evaluative analysis of the CourseInfo software (Blackboard, Inc., 1998) was undertaken. The tracking capabilities of the CourseInfo software were evaluated through measurement of (1) the number of log-ons to the threaded discussion Web page, (2) the number of threaded statements, (3) the number of threaded dialogue statements of response to other student statements, and (4) the number of threaded dialogue statements of response to teacher statements.





Analysis of tracked user movement within the shared Web-based environment was investigated as one possible model of evaluating learner academic behaviors within, and as a result of, Web-based environments. While further analysis is needed, results of this study support tracking user movement as an avenue of quantifying the effectiveness of Web-based learning initiatives.

#### Study Background

#### Subjects

Subjects for this study were first-time 9th- and 10th-grade biology students from three public education high schools in the Conroe ISD within Conroe, Texas. The sample (n) contained 78 students of the 1,400 students enrolled in Biology I courses. Two classes from each school were selected and randomly assigned to a control class and a treatment class. Selected campuses operated on an A-B, 90-minute class alternating block schedule.

#### **Technology**

Participants assigned to treatment groups received access to technology. This technology included Macintosh® platform computers. Scanners, digital cameras, Internet connections, and laser printers rounded out the technology utilized by the treatment groups. Software access included Apple® QuickTake® PhotoNow software, HP® scanning software, Microsoft® Office, Netscape Navigator® Gold 3.0, and Inspiration® 4.0.

#### Ecology Curriculum

Teachers at selected campuses received an Adopt-a-Ditch ecology curriculum (Stone & Myers, 1994). This modified curriculum provided the context for the Web-based learning environment. Training for all curriculum lessons, the LaMotte Freshwater Testing Kits, and the Web-based database was provided. Spontaneously generated forum topics were noted as the researcher analyzed collected data within the Web-based learning environment.

#### Teacher Training

Technology training consisted of instruction and practice in using the CourseInfo intranet simulation software (Blackboard, Inc., 1998), uploading and downloading Inspiration files through the Internet, using a digital camera and downloading images, working with Excel spreadsheets and graphics, and using the discussion forum environment.

#### Software Background

A secondary intent of this study was to provide evaluative discussion of the software product used to create the shared learning environment. As this newly developed distance education software product was in the process of being piloted by a variety of institutions and research programs, permission for its use as part of this study was obtained (from Blackboard, Inc.). Agreements between the author and software developers included evaluative information resulting from use of the product, taking into consideration the constraints of its application within the nature of the study. Results addressing the secondary research question focused



on an examination of tracked user movement findings, discussion forum findings, and difficulties experienced during use of the software product.

One caveat exists as a part of answering this secondary research question. It is imperative to remember that this section's evaluative basis remains the by-product of this particular study. As many other piloted uses of this product have occurred, or are presently ongoing, this author suggests that additional review of other evaluative efforts be examined should any future use of the product be initiated.

Further, it must be noted that use of the product within this study represents a model whereby security access was granted to all subjects within the study. This type of widespread access is not the usual mode of access suggested by the developers. However, this approach was utilized to create a more constructivist (Jonassen, 1996), shared environment given the nature of the software product. Therefore, review of the secondary research question findings should occur with forethought of these caveats. Future users of this software product should consider the type of learning environment they envision, as well as the learning philosophy underpinning that environment, as this study's findings of the software are taken into account.

#### Software Capabilities within the Model of Study

#### Tracked User Movement

CourseInfo software provides a database of user movement patterns once entry in to the Web site occurs (see Figure 1). Analysis of recorded user movement can be obtained for a variety of statistical views of user movement.

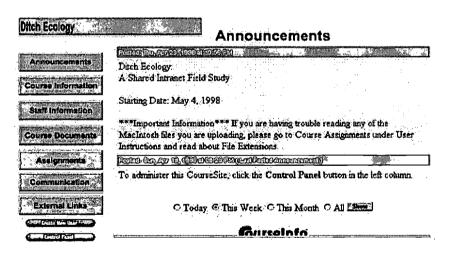


Figure 1. Announcement page for Web-based learning environment.

These statistical views were made available through the CourseSite Stats option accessible with a security password through the control panel. Views (analyses) available include: (1) traffic hits for the entire course site; (2) traffic hits by each page within the course site (see Figure 2); (3) traffic hits by date; (4) traffic hits by time and by links (see Figure 3); (5) traffic hits by countries, visitors, and browsers; and (6) filtering the preceding information by server domain.



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Lits	***	Wob Fago URL Analysis	● Filter ● Go
176	34.7%	Main_Page	99
68	13.4%	Course_Documents	99
52	10.2%	Assignments	44
49	9.56%	Shadeat_Tools	99
46	9.07%	Communication	36
33	6.50%	Course_Information	99
31	6.11%	External_Links	99
22	5.52%	Staff_Information	44
12	2.36%	Student_Homepages	99
10	1.97%	Virtual_Char_Room	30
2	0.39%	Index_Noframes	00

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Figure 2. Movement analysis by Web-site page.

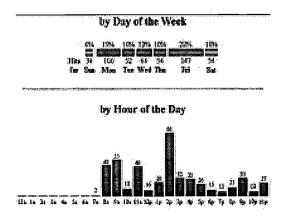


Figure 3. Analysis by Web-site day and time.

As a part of the study, tracked user movement generated information related to several aspects of user movement. Repeated visits (interpreted as level of traffic) can be connected to user preferences related to Web-page function, design, or information. The total number of hits can indicate to some degree user time within the shared learning environment in general. Evaluating which pages were accessed during the study could indicate depth and type of use of the shared environment. Use of help pages within the shared environment could imply use in a self-sufficient way. Finally, tracked use of the discussion board provided information as to the development of the entire study group, the collaborative extent of the group, and student-initiated discussion. Tracked user movement, identified movement by page title, and number of traffic hits, as well as percentages, were summarized (see Figure 4).

Analysis of user movement by page indicated entrance in to the shared environment through the main page. The Course Documents page was used with the most frequency (13.3%) after entering the shared environment. This page provided the storage location for uploaded files (graphs, images, and documents) for all participants. All files accessed through this page by any participant were viewed or downloaded. Use of the



Assignments page incurred 9.8% of the hits. This page held sample files and user instructions for the various activity demands of the ecology

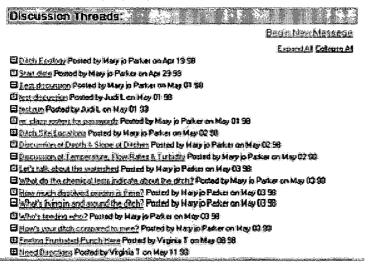


Figure 4. Sample discussion threads used in tracking learner movements.

curriculum. The limited use of this page simulated the nature of FAQs pages in other Web sites, that is, it remained relatively unused. The third most frequented page within the Web site was the student Tools page, at 11.9%, indicating that help pages entitled Tools seem to be more frequently accessed by novice users than pages titled in other ways.

An analysis of user movement by date was undertaken as an indicator of the overall use of the shared environment. Table 1 contains a use-by-date display of user movement within the Web site. Examination of use-by-date hits, filtered through server domain, provides evidence of the site's extension of interactivity between time and the users. At first glance an appearance of minimal use might be seen in the small number of hits and the low percentages. However, closer examination indicates that in an A-B block schedule hits were recorded for each day of the school week. This looms important as it suggests that in some way students gained access to the shared Web-based environment during days when no science class was scheduled.

#### Discussion Forum Findings

Analysis of the use of the shared environment's discussion board revealed much about the amount of time spent using a shared discussion place as well as about other previous discussion forum experiences within the classroom. Extrapolation of the number of hits associated with accessing the discussion board provided evidence of minimal use of this type of environment and technology, suggested a lack of previous exposure to the electronic sharing of ideas and information, and detected technical issues as the most pressing and reported discussion topics. The following sections address these extrapolations.

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Table 1. Analysis of User Movement by Date of Use for the Duration of Study

Date of Use	Day of the	Scheduled	Hits	Percentage of
	Month	Study Dates		Hits (%)
5-4-98	Monday	+	4	1.4
5-5-98	Tuesday		7	2.5
5-6-98	Wednesday	+	7	2.5
5-7-98	Thursday		8	2.8
5-8-98	Friday	+	103	39.2
5-11-98	Monday		70	24.7
5-12-98	Tuesday	+	16	5.7
5-13-98	Wednesday		27	9.5
5-14-98	Thursday	+	25	8.8
5-15-98	Friday		16	5.7
Total			283*	100.0

*Note:* The \* denotes the number of hits remaining after discounting the number of hits recorded by the dissertation's author while monitoring the site.

#### Use of the shared discussion board

Originally, a total count of discussion threads posted by the author of the study was determined. Sixteen threads were initially established as "starters" for each of the activities in the ecology curriculum guide. The use of starter threads potentially enabled moderation and enumeration of topics by the author or by each campus teacher. A count of the number of discussion responses indicated very little activity within the shared discussion board. Minimal new discussion threads were originated through the duration of the study. The lack of discussion threads or responses seemed surprisingly low considering that each curriculum activity included responses to the discussion board topics as indicated in each activity directions. Analysis of discussion threads and responses suggested little time of use within the forum opportunity of the site. Only five new discussion threads were recorded over the duration of the study. Of the new threads recorded only one came from a student. Efforts to understand this lack of activity brought focus to the nature of the discussion threads or response messages actually recorded within the discussion forum.

#### Nature of the discussion forum threads and responses

A review of the content of the discussion threads created by teachers and students indicated their experiences with technical difficulties associated with some aspect of the various technologies involved in the study. Primarily, use of the uploading and downloading capabilities presented time-consuming difficulties as apparent in the number of discussion threads and responses made by teachers and the one student discussion response dealing with this aspect of the study. Additionally, qualitative analysis of the dissertation author's discussion responses suggests frustrations and needed help on the part of the writers of the responses. In some instances the discussion thread titles indicated the degree of technical problems being experienced: "Feeling Frustrated-Punch Here," "Need Directions," or "Need Directions too."

An analysis of the dates of the forum threads and responses provides additional evidence of the minimal use of the discussion forum as well as potential reasons for this lack of use. The dates of teacher and student discussion threads and responses seemed to indicate initial use occurred late in the study and did not follow the curriculum guide of activities. Table 2 summarizes discussion threads and responses by date.



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Table 2 seems to suggest that the teachers, at least, were beginning to try to use the forum as a place to share difficulties as well as a place for seeking help. When dissertation author discussion threads and responses were analyzed, all appeared to address technical issues inherent in the software or in the computer platform providing technology capabilities.

Table 2. Summary of Discussion Threads and Responses by Date

Date	Respondent
May 1	Teacher
May 1	Teacher
May 8	Teacher
	Student
	Teacher
•	
May 5	Teacher
	May 1

#### Difficulties Experienced Using CourseInfo Software

Examination of uploaded files and discussion forum transcripts provided evidence of a variety of difficulties experienced with the piloted software. These difficulties seemed to cluster around novice user levels of the participants, computer platform inconsistencies, and software security issues.

When an initial survey of all uploads in to the CourseInfo ditch ecology site was performed, upload attempts provided evidence that use of the site by students was high. However, this same information suggested that the on-site help pages and on-hand training documents had not been accessed during initial uploads, as many attempts to upload were to incorrect locations.

Once user uploads were found, attempts to open and view each was made. This was initially undertaken by the dissertation author to ensure the viewability of the data. Computer platform issues came into evidence during this phase for all campus users. All campus users operated Macintosh platforms that automatically upload files with no preassigned file extension added to the file name. PC platforms and software automatically preassign the file type extension to a file name, thereby enabling identification of the file type. This became critical within the CourseInfo environment as each uploaded file, when opened, launched a copy of the application needed for readability. The lack of automatic assignment of file type extensions as a result of Macintosh platform use caused initial uploads by each campus to be unreadable. This issue created multiple upload attempts of the same data and high frustration levels among the users uploading.

#### **Summary**

The secondary research question attempts to identify academic behaviors that can be tracked within a shared Web-based learning environment such as that offered by the piloted CourseInfo software. Identifying user movement patterns in Web-based environments and discussion forum patterns as well as attempting to ascribe meaning to these movement patterns by connecting these movements to academic problem-solving and metacognitive reflection offers much potential for understanding these new learning environments. Connecting meaning to these movement trends within the context of the shared Web-based environment may be the most interesting, potentially meaningful aspect of this study.

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As shared Web-based learning environments within secondary classrooms experience rising use, models focused on understanding the critical elements of effectiveness of these environments seem necessary, rather than novel. Tracking user movement and discussion forum patterns offers a potential way of documenting and quantifying learner critical thinking and metacognitive reflection within a Web-based learning environment. Tracking movements and discussion forum patterns provides one method of assessment within the Web-based environment that can be maintained behind the scenes without interference to the learner and without overt, game-like feedback. This type of assessment informs instruction, the instructor, and the learning environment. The potential exists for measuring the effect of the environment through the learner's movement patterns, thereby offering the possibility of creating an optimum learning environment for each and every type of learner.

The richness of shared data, data examination, and learner insights follows naturally from analyzing user movement patterns. Moving learner metacognitive reflection capabilities to a Web-based learning environment presents the academic accountability often missing from current models of Web-based learning. Not only depth of knowledge, but also critical-thinking levels, can begin to be warehoused for constructive use by each learner/user.

Contextualizing Web-based learning environments with real-time scientific data collection and evaluative activities appears to favorably support the improvement of academic behaviors. Given the strong emergence of distance education initiatives, evaluating and assessing these behaviors within the Web-based learning environment becomes ever more important. Add to this the constructivist nature associated with this study's model, and the power and empowerment of this type of Web-based learning place becomes awesome, and needed.

#### Future Implications

The results of this study present one practical model for infusing technology in to the classroom setting; for improving problem-solving ability and metacognitive reflection over a short duration; for creating a collaborative, cooperative learning space; and for maintaining a science space for learning where no gender differences arise.

The power an intranet offers within the constraints of a school district, or geographic locale, has not yet been tapped. This study proposes one mechanism for doing just that given the infrastructure present or absent through the use of a Web-based intranet. This model offers a "get your feet wet" method of networked connectivity for classrooms and teachers who have not yet jumped in to the World Wide Web.

This research provides a study in contextualizing connectivity with end goals of improved problem-solving and metacognitive reflection. Both of these elements are often lost when initial attempts to jump in to networked learning occur or are contemplated. Further, this study provides an avenue of documenting the nature of learning during the use of Web browsing or other networked connections. Tracking learner movements within a browsed Web site has metacognitive as well as problem-solving implications for each and every learner.



#### References

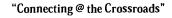
Blackboard, Inc. (1998). CourseInfo [Online courses server software]. www.courseinfo.com

Brown et al. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42.

Jacobsen, M., & Levin, J. (1993). Network learning environments and hypertext: Constructing personal and shared knowledge spaces. *International Journal of Educational Telecommunications, 1*(4), 367–388.

Jonassen, D. (1996). *Computers in the classroom: Mindtools for critical thinking*. Upper Saddle River, New Jersey: Prentice-Hall.

Stone, H., & Myers, D. (1994). *The Adopt a Ditch project*. Harris County Office of the Texas Agricultural Extension Service, the Texas Sea Grant College Program, the Texas A&M University System, and the Texas General Land Office.





Research Paper: Moving Beyond the Crossroads: Teachers as Agents for Change

## Images of Teaching with Computer Technology: A Metaphorical Perspective

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#### Key Words: metaphors, images, teaching actions, computer technology integration

There has been keen ongoing interest in how teachers integrate computer technology in to their teaching (Dias, 1999; Hadley & Sheingold, 1993; Sandholtz, Ringstaff, & Dwyer, 1997). The aim of this research is to describe how teachers' images of teaching with computer technology can be a means to understanding how they construct meaning in their integration of computer technology in to their teaching.

This paper focuses on the actions of teaching through teachers' images of their teaching with computer technology integration in to teaching-learning environments: the way the teaching process is structured by teachers' relationships with computer technology and how this relationship defines their work (Bigum, 1997) and their "thoughts, voice and experiences" (Budin, 1999, p. 668). It also focuses on how teachers themselves comprehend and convey their roles (Budin, 1991) and thus search for a new paradigm or paradigms that encompass these roles (Kerr, 1991). These insights may shed light on the range of opportunities afforded by technology from the teachers' perspectives.

Salomon (1998) argues that the technological affordances provided by computer technology offer needed tools and novel teaching-learning opportunities in classroom teaching. This, he states, requires novel psychological insights to materialize in the classroom. Salomon claims that human understanding of cognition and the technologies they develop and utilize as tools for teaching are comprehended metaphorically. Both are thus linked, as the following quote signifies:

Historically, our understandings of the human psyche, particularly cognition and the technology we employ as metaphor or as tools for teaching tend to go hand in hand ... this parallelism between our psychological understandings and the technologies available to us remain unchanged.... The way we believe people learn and think and the information technologies we develop to make that possible continue to live in a tight, reciprocally supportive marriage. (Salomon, 1998, p. 4)

An implication garnered from this perspective strengthens the notion that the way we conceptualize our psychological insights in relation to pedagogical actions afforded by technologies can be conveyed as metaphors.

Thus the preceding brief review concurs with what Kerr (1996, p. 23) refers to as a new paradigm in research in technological affordances and teachers, "a person-centered vision for technology in education."

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It is imperative to understand that teachers' relationships with computer technology integration may lead us to consider the nature of teachers' goals and how they fulfill them (Bromley & Apple, 1998). The essence of what teachers actually do in classrooms and a comprehension of their views—an in-depth "reappraisal" (Scimshaw, 1997, p. 112)—of teachers' use of computer technology may be revealed.

#### Method of the Study

Image is proposed as a construct to understand teachers' particularistic knowledge in the context of teaching with computer technology. This particularistic knowledge is defined as the "particulars of practice" providing a "rich picture" (Johnston, 1992, p. 124) of teaching actions with computer technology. The study reported in this paper has incorporated the utilization of teachers' metaphors as a tool to investigate teachers' images of teaching with computer technology.

By using metaphors to illuminate teachers' images, the study offers a means to comprehend how teachers see themselves teaching with computer technology. Metaphors provide a means to make explicit the teachers' language of practice and provide insights in to their teaching practice with computer technology leading to a discussion of teachers' construction of meaning (Collins & Green, 1990) with the integration of computer technology in to their teaching.

#### A Review of the Methodology Used to Elicit Teachers' Metaphors

The approaches to research on metaphors for teaching fall into two categories. The first category is the natural metaphoric language (Morine-Dershimer & Reeve, 1994) or speech metaphors (Connelly & Clandinin, 1988) that are prevalent in teacher discourse. The second category is the generation of verbal or written explicit metaphors (Marshall, 1990) or metaphorical statements (Gurney, 1995; Miller & Fredericks, 1988) by teachers resulting from assigned or instructional activities.

The speech metaphor analysis approach and metaphorical statement approach have both been extensively used in educational research. The identification and analysis of preservice and inservice teachers' metaphors have contributed to the understanding of teachers' thinking, professional knowledge, beliefs, teacher role conceptualizations, images of teaching, and teaching actions.

In the field of explicit metaphorical statements research, metaphors have been used to investigate the images of how teachers view themselves and their learners in the classroom (conceptions of teaching and learning; Gurney, 1995); images that teachers have of themselves in fulfilling their roles (Berliner, 1990); and the images of personal practical knowledge (Ritchie & Russell, 1991). The underlying themes in the utilization of metaphors in these areas of research were based on the assumptions that "images lead to metaphors"; "metaphors provide a careful means for clustering images"; and "images are metaphorically embedded" (Bullough, 1991, p. 200). Ritchie and Russell (1991) also claim that images are expressed as metaphors and that these metaphors make the images (embedded within the metaphors) graphic and visible.

The relationship between metaphors and images is expressed clearly by Calderhead and Robson (1991, as cited in Bullough & Stokes, 1994, p. 198):

In fact being able to recall images and to adopt and manipulate these images in reflecting about action in a particular context is possibly an important aspect of the task of teaching....



Images, whether representations or reconstructions, provide us with an indicator of teachers' knowledge attributable to different training experiences and the relationship between knowledge and observed practice.

Thus, metaphors can shed light on the images that teachers capture and encapsulate and refer to in the course of their teaching.

Research studies by Gurney (1995) and Miller and Fredericks (1988) have provided much support for the use of metaphorical statements. In a study conducted with preservice teachers' metaphorical statements of the teaching and learning process, Gurney demonstrated that metaphorical statements could be a device in the envisioning of teachers' conceptions of teaching. This, he suggested, could be done by analyzing metaphorical statements for themes and moods. Miller and Fredericks (1988), in a study involving 25 students in a sociology of education class, had also demonstrated that metaphorical statements helped to "reflect and structure individual experience" (p. 263) and claimed that metaphorical statements were viable as a "rich source of qualitative data" (p. 269).

On a final note, Dickmeyer (1989) has suggested that metaphors can depict an oversimplified view of the phenomenon under study. In this study such oversimplification is viewed as a "virtue" following the convention of Bullough (1991, p. 44). It is acknowledged that the simplification would enable the teachers to reflect on and analyze more easily their teaching with computer technology.

#### Data Collection

Data for this study were elicited by the second approach to the use of metaphors—explicit metaphors generated in response to an instructional task. The data collection consisted of three steps. First, teachers were instructed to write down personally constructed metaphors (Munby, 1987, as cited in Ritchie, 1994) in the form of explicit metaphorical statements. This was followed by teachers creating narratives (Tobin & Tippins, 1996) of selected metaphorical statements. The last step of this data collection stage involved the teachers' derivation of metaphors for the statement "The teacher as ..." (Berliner, 1990; Ritchie, 1994; Ritchie & Russell, 1991; Tobin, 1990, 1993; Tobin & LaMaster, 1995; Tobin & Tippins, 1996) from the narratives of their respective metaphorical statements.

#### Step I: Generating Written Metaphors

The use of the metaphorical statement approach in this step followed the convention of Miller and Fredericks (1988), Gurney (1995), and Inbar (1991). The purpose of generating personal metaphors in this study was to capture and encapsulate participants' teaching actions with computer technology in graphic and visible ways.

In this study the six secondary school teachers from the Republic of Singapore were asked to write down three or four metaphors each for their teaching process with computer technology. Metaphors were elicited during the five-month research cycle. The teachers were asked:

Please write three or four metaphors of your teaching process with computer technology.

The purpose of writing more than one metaphorical statement was to prevent teachers from responding to the task by giving a one-sided emphasis on selected aspects of the phenomenon under study (Inbar, 1991). In addition, Bullough (1991) cautioned that single metaphors would not suffice in capturing the phenomenon under study. All the metaphors were collected and compiled by the researcher.

<sup>&</sup>quot;Connecting @ the Crossroads"



#### Step II: Deriving Narratives from Metaphorical Statements

Following the verification process, the qualified metaphors (refer to Gurney, 1995, for a detailed process for qualification of metaphorical statements) were returned to the teachers for corroboration. This step followed the convention of Tobin and Tippins (1996) and Inbar (1991). Teachers were asked to select one metaphorical statement each that was representative of their teaching with computer technology from the metaphorical statements that they had written and that were verified. The teachers were then asked to read their respective chosen metaphors and describe the metaphor. The following phrase was used by the researcher to assist the teachers in explaining their metaphors.

Choose one metaphor which is the most representative of your teaching with computer technology and please explain it in a few words.

The main purpose for this procedure was to make explicit the meaning underlying the chosen metaphors rather than rely on the researcher's interpretation of the meanings. Aspin (1984, p. 34) had stressed the need to use metaphors as a generative tool for educational discourse and not merely as "fixers or thought stoppers." In addition to that, Inbar (1991, p. 25) cited two important justifications for the preceding step: first, teachers' choices of representative metaphors were made explicit, revealing the "deeper meaning" that they had for the chosen metaphor, and second, teachers' explanations served as connections between the tacit and the explicit domains of their knowledge. Therefore, by exploring the narratives, a better perspective of the images of teaching with computer technology was focused on.

#### Step III: Creating Metaphors for "The teacher as ."

This stage involved the participants in reading their narratives three times and relating their narratives to the following phrase:

Metaphors for "The teacher as ..."

Responses were transcribed by the researcher, and teachers were asked to verify their metaphor by reading their narratives again and confirming their choice of metaphor for "The teacher as ...".

The purpose for this procedure was to allow teachers to read their narratives in order to capture their own images of teaching with computer technology and encapsulate them in another metaphor. The narratives were the depiction of "actions, causes and consequences" (Lyle, 2000, p. 59) of teaching actions with computer technology integration. This step gave the teachers an opportunity to reflect on their own practices and look at the language they had assigned to their teaching actions (Briscoe, 1991). This was also a way for the teachers to "re-vision" (Connelly & Clandinin, 1988, p. 77) their construction of metaphorical sentences and related narratives, and to contextualise the teaching actions in another metaphor, thereby structuring one's teaching practices and making explicit personal practical knowledge.

Furthermore, by looking back at the construction of practice especially with computer technology, teachers were reflecting on what they perceived as the "visual imagery" (Berliner, 1990, p. 85) embodying the requirements of their roles in the classroom. In addition, "The teacher as ..." metaphors could reveal the thoughts and perceptions that teachers have of themselves (Anderson, 1995).

This process enabled the researcher to get a further set of coherent and consistent metaphors that alleviated the major concern of single metaphors not being enough to describe the complexities of the teaching process with computer technology.



Thus by eliciting a second set of metaphors from the teachers' own narratives, insights in to teachers' images of teaching actions were explored. Table 1 illustrates the data collection steps previously depicted.

Table 1. Components of the Data-Gathering Process by Steps of Occurrence

Table 1. components of the Data-Gathering 1 focess by Steps of Occurrence					
Data Collection	Instructions That Prompted	Data That Actions			
Actions	Actions	Produced			
Step I: Personally Written Metaphors					
Collection of metaphorical	"Please write three or four	Teachers' handwritten			
statements from teachers.	metaphors for your teaching	metaphorical statements.			
	process with computer				
·	technology."				
Qualification and Verification of Metaphorical Statements					
Step II: Derivation of Narratives					
Teachers select the most	"Choose one metaphorical	Audio recording and verbatim			
representative statement from	statement which is most	verbal transcript of participants'			
their own set of metaphorical	representative of your teaching	explanations of their most			
statements.	with computer technology and	representative metaphorical			
	please explain in a few words."	statement.			
Step III: Metaphors for "The teacher as"					
Derivation of metaphors for "The	"Please read the narrative for your	Audio recording and verbatim			
teacher as" from teachers' own	representative metaphorical	verbal transcript of teachers'			
narratives.	statement at least three times. Can	responses.			
	you now complete the phrase 'The				
	teacher as'."				

#### Analysis of the Data

Data collection generated three sets of results: personally constructed metaphorical statements; narratives of teachers' most representative metaphorical statements for teaching with computer technology; and "The teacher as ..." metaphors. The metaphors for "The teacher as ..." were used to derive corresponding images and associated images depicted in the narratives for each teacher respectively.

#### **Findings**

From the analysis of the data the teachers' images of teaching with computer technology were derived. Consideration of the participants' metaphorical statements (Table 2) and their metaphors (Table 3) revealed connections that suggest conceptual coherence among the metaphorical statements, the narratives, and "The teacher as ..." metaphors.





Table 2. Teachers' Most Representative Metaphorical Statements for Their Teaching Process with Computer Technology

#### Sundari

Computer technology is a tool I use to anchor my students so that they are focused.

#### Anthony

To teach or learn with computers is like learning to drive a car. Once the basics are mastered, driving is easy. Like driving it can break down and cause frustrations.

#### Ning

Computer technology is one of the tools in my toolbox that can help the students make meaning of what they are learning.

#### Angela

Computer technology to teaching is like seasoning to cooking. Appropriate quantity added at an appropriate time makes the dish taste better.

#### Tan

Computer technology in my teaching is like a bank. A lot of wealth is stored there. Pupils withdraw from it.

#### Woo

The teacher gives the skeleton and the students use computer technology to build up the meat of the skeleton.

Table 3. "The teacher as ..." Metaphors

Participants	Metaphors for			
	"The teacher as"			
Sundari	Captain			
Anthony	Artist			
Ning	Director			
Angela	Cook			
Tan	Director			
Woo	Head Chef			

#### Discussion

All the teachers who participated in this study communicated their images of teaching actions with computer technology integration through their metaphors (metaphorical statements and "The teacher as ..." metaphors) and accompanying narratives. The narratives served to unravel the conceptual mappings (Lakoff, 1994) that metaphorical statements and the "The teacher as ..." metaphors had encapsulated. The corresponding and associated images depicted in the narratives together with the metaphors (metaphorical statements and "The teacher as ..." metaphors) revealed how psychological insights were related to pedagogical actions (Salomon, 1998).



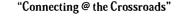
The teachers' metaphorical statements basically depicted teaching actions with computer technology as a tool with a purpose, "a tool I use to anchor" and "to build up," or as a tool itself that had a function or served to perform a function, "a car," "bank," and "one of the tools in my toolbox." The corresponding and associated images in the narratives further embellished the characteristics of the tool image together with the teaching images present in the narratives. For example, Sundari's image of teaching using computer technology involved images of an "anchor" in the "sand." Sundari's role in relation to the learning process with computer technology was to focus students onto the knowledge using the computer technology. The computer technology was the source of the knowledge—"it is like the anchor on a ship. It is deeply rooted in the sand"—to be transferred to the students. The captain metaphor revealed the image of a teacher in control of students' learning with the aid of computer technology. In the context of teaching with computer technology, it was possible that Sundari perceived the teacher as controlling the learning process of students by stabilizing the process with the computer technology, like a captain stabilizing a ship with an anchor. This results in students being focused on the content to be learned.

Encapsulated in the rest of the teachers' "The teacher as ..." metaphors and metaphorical statements were also corresponding and associated images as revealed by the narratives. The artist metaphor depicted Anthony's image of teaching with computer technology as being centered on the mastering of the computer technology for teaching, just like mastering the skills to drive a car. The director metaphor captured Ning's image of a teacher directing students in the use of computer technology for their own personal learning outcomes. The cook metaphor captured the image of Angela as a teacher who put much effort in to the integration of computer technology, with consideration given to the choice of software/hardware and timing, to make the teaching process effective.

The director metaphor encapsulated Tan's image of teaching with computer technology as a teacher directing students to use the computer technology like a "bank." Students were to "draw" content from the computer technology. The head chef metaphor encapsulated Woo's image of teaching with computer technology as a teacher needing to be in complete charge of the teaching process so that students will gain better content knowledge or even more content knowledge.

#### Conclusion

In this paper, the focus was to describe how teachers' images could help to increase the understanding of teachers' construction of meaning in teaching with computer technology integration. The empirical findings of this study have allowed the building of a relationship between the psychological insights, as captured and encapsulated by metaphors, and that of the narratives, which depicted the pedagogical actions. The findings further imply that teachers construct mental images to view and understand their thoughts and actions (Briscoe, 1991). The computer technology integration, in this study, was structuring and influencing the teachers' understanding leading to utilization of how teaching and learning were taking place. The study further reflects on how teachers operationalize teaching actions with images of themselves, the computer technology, their students, and the learning process. To help teachers utilize computer technology in their teaching there is a need for teacher educators during preservice and inservice courses to examine teachers' images. The findings here present a plausible reference to teachers' construction of meaning with the integration of computer technology in to teaching actions.





#### **Implications**

Teacher educators taking part in inservice and preservice courses involving the integration of computer technology in to pedagogy should give early attention to the images that teachers' thought structures encompass.

Inservice computer technology trainers have to look closely at their teaching approaches to accommodate the images that teachers already have of teaching with computer technology. Inservice computer technology trainers should embrace these underlying images to bring about effective ways to prepare teachers in their use of computer technology for pedagogical purposes.

#### References

Anderson, L. W. (1995). The nature and characteristics of teachers. In L. W. Anderson (Ed.), *International encyclopedia of teaching and teacher education* (2nd ed., pp. 3–5). Kidlington, Oxford, UK: Elsevier Science Ltd.

Aspin, D. (1984). Metaphor and meaning in educational discourse. In T. William (Ed.), *Metaphors of education* (pp. 21–37). London: Heineman Educational Books Ltd.

Berliner, D. C. (1990). If the metaphor fits, why not wear it? The teacher as executive. *Theory into Practice*, *29*(2), 85–93.

Bigum, C. (1997). Teacher and computers: In control or being controlled? *Australian Journal of Education*, *41*(3), 247–261.

Briscoe, C. (1991). The dynamic interactions among, beliefs, role metaphors, and teaching practices: A case study of teacher change. *Science Education*, *75*(2), 185–199.

Bromley, H., & Apple, M. W. (Eds.). (1998). *Education/technology/power: Educational computing as a social practice*. New York: State University of New York Press.

Budin, H. (1999). Essay review: The computer enters the classroom. *Teachers College Record*, 100(3), 656–669.

Budin, H. R. (1991). Technology and the teacher's role. *Computers in the Schools*, 8(1/2/3), 15–26.

Bullough, R. V. (1991). Exploring teaching metaphors in preservice teacher education. *Journal of Teacher Education*, 42(1), 43–51.

Bullough, R. V., & Stokes, D. K. (1994). Analysing personal teaching metaphors in preservice teacher education as a means for encouraging professional development. *American Educational Research Journal*, 31(1), 197–224.

Collins, E. C., & Green, J. L. (1990). Metaphors: The construction of a perspective. *Theory into Practice*, 29(2), 71–77.



- Connelly, F. M., & Clandinin, D. J. (1988). *Teachers as curriculum planners: Narratives of experience.* New York: Teachers College Press.
- Dias, L. B. (1999). Integrating technology: Some things you should know. *Learning & Leading with Technology*, *27*(3), 11–13, 21.
- Dickmeyer, N. (1989). Metaphor, model, and theory in education research. *Teachers College Record*, *91*(2), 151–160.
- Gurney, B. F. (1995). Tugboats and tennis games: Preservice conceptions of teaching and learning revealed through metaphors. *Journal of Research in Science Teaching*, 32(6), 569–583.
- Hadley, M. S., & Sheingold, K. (1993). Commonalties and distinctive patterns in teachers' integration of computers. *American Journal of Education*, *101*, 261–315.
- Inbar, D. E. (1991). A metaphorical insight into educational planning. *Journal of Educational Administration*, *29*(3), 23–37.
- Johnston, S. (1992). Images: A way of understanding the practical knowledge of student teachers. *Teaching and Teacher Education*, 8(2), 123–136.
- Kerr, S. T. (1991). Lever and fulcrum: Educational technology in teachers' thought and practice. *Teachers' College Record*, *93*(1), 114–136.
- Kerr, S. T. (1996). Visions of sugarplums: The future of technology, education, and the schools. In S. T. Kerr (Ed.), *Technology and the future of schooling* (pp. 1–25). Chicago: The University of Chicago Press.
- Lakoff, G. (1994). What is metaphor? In J. A. Barnden (Ed.), *Advances in connectionist and neural computation theory* (Vol. 3, pp. 203–258). Norwood, New Jersey: Ablex.
- Lyle, S. (2000). Narrative understanding: Developing a theoretical context for understanding how children make meaning in classroom settings. *Journal of Curriculum Studies*, *32*(1), 45–63.
- Marshall, H. H. (1990). Metaphor as an instructional tool in encouraging student teacher preparation. *Theory into Practice*, *29*(2), 129–132.
- Miller, S. I., & Fredericks, M. (1988). Uses of metaphor: A qualitative case study. *Qualitative Studies in Education*, 1(3), 263–272.
- Morine-Dershimer, G., & Reeve, P. T. (1994). Studying teachers' thinking about instruction: Issues related to analysis of metaphoric language. In I. Carlgren, G. Handal, & S. Vaage (Eds.), *Teachers' minds and actions: Research on teachers' thinking practice* (pp. 215–231). London: Falmer.
- Munby, H. (1987). Metaphor and teachers' knowledge. *Research in the Teaching of English, 21*(4), 377–397.
- Ritchie, S. M. (1994). Metaphor as a tool for constructivist science teaching. *International Journal of Science Education*, *16*(3), 293–303.



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- Ritchie, S. M., & Russell, B. (1991). The construction and use of a metaphor for science teaching. *Research in Science Education*, *21*, 281–289.
- Salomon, G. (1998). Technology's promises and dangers in a psychological and educational context. *Theory into Practice*, 37(1), 4-10.
- Sandholtz, J. H., Ringstaff, C., & Dwyer, D. C. (1997). *Teaching with technology: Creating student-centered classrooms*. New York: Teachers College Press.
- Scimshaw, P. (1997). Computers and the teachers' role. In B. Somekh & N. Davis (Eds.), *Using information technology effectively in teaching and learning: Studies in preservice and inservice teacher education* (pp. 100–113). London: Routledge.
- Tobin, K. (1990). Changing metaphors and beliefs: A master switch for teaching. *Theory into Practice, 29,* 122–127.
- Tobin, K. (1993). Referents for making sense of science teaching. *International Journal of Science Education*, *15*(3), 241–254.
- Tobin, K., & LaMaster, S. U. (1995). Relationships between metaphors, beliefs and actions in a context of science curriculum change. *Journal of Research in Science Teaching*, *32*(3), 225–242.
- Tobin, K., & Tippins, D. J. (1996). Metaphors as seeds for conceptual change and the improvement of science teaching. *Science Teacher Education*, *80*(6), 711–730.



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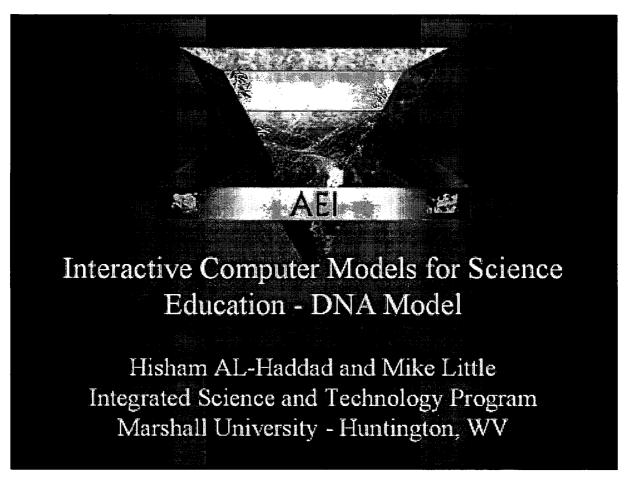
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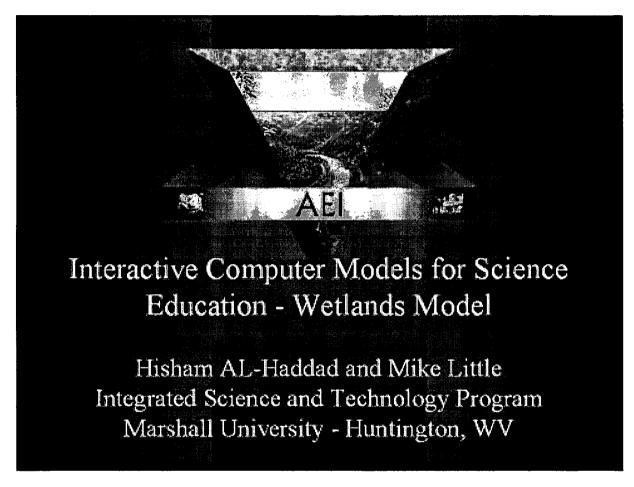


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## Learning Pathways

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Karen Vander Molen Instructional Technology Facilitator Katy ISD kvandermolen@ Learning Pathways (<a href="www.katy.isd.tenet.edu/pathways">www.katy.isd.tenet.edu/pathways</a>) is a Web site created as a resource for teachers, students, curriculum specialists, instructional technologists, and parents.

#### **Learning Pathways Menu**

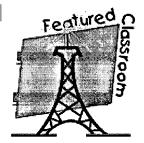
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Each of these resources provides extraordinary opportunities to connect with people and places around the world and allows you to add a divergence of ideas and perspectives to your topic of study. Based on research of the International Society for Technology in Education (ISTE) and the Milken Exchange on Education Technology (1999), it's not enough to merely have the hardware available, teachers need training, continuous support, and modeling of best practices for them to successfully integrate the available technology with their curriculum. Learning Pathways is our district's model of how to do this.



In the **Reach Out!** section (<a href="www.katy.isd.tenet.edu/pathways/reach.htm">www.katy.isd.tenet.edu/pathways/reach.htm</a>) you will find three types of resources: (1) online projects, (2) subject matter experts, and (3) virtual field trips. Online projects provide opportunities for students and teachers to connect with other classrooms around the world for curriculum-based projects. Subject matter experts provide expertise for a given field and can serve as mentors to students as they study certain topics. Virtual field trips enable students to travel "virtually" with a group of people exploring different parts of the world and then electronically share what they find.

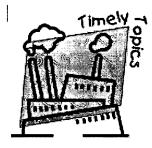
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In the Featured Classroom section

(<u>www.katy.isd.tenet.edu/pathways/feature.htm</u>), Katy ISD highlights its commitment to providing the best education to all students through a balanced, dynamic curriculum. Technology plays an important role in delivering that curriculum. Find out how technology is being integrated into teaching and learning in Katy ISD in this section of the site.

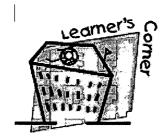
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In the **Timely Topics** section

(<u>www.katy.isd.tenet.edu/pathways/timely.htm</u>) you will find activities and links to sites on topics being studied throughout the school year in various curriculum areas. It is through the coordinated efforts of the Katy ISD Instructional Technology Department, instructional specialists, teachers, and the district Webmaster that these resources are made available here.

<u>TOP</u>



#### The **Learner's Corner** section

(<u>www.katy.isd.tenet.edu/pathways/learner.htm</u>) is where you will find special resources for elementary and secondary learners, in addition to the homework help sites. Included in this section are sites on the Web that provide interactivity going beyond just providing information on a given subject. You can explore and respond to information you find on these sites in an interactive way.

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#### The Search for More section

(<u>www.katy.isd.tenet.edu/pathways/search.htm</u>) contains a list of educationally based search tools to use for keyword searches. Search tips and a search tutorial are provided here.

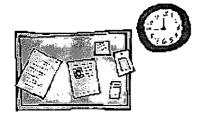
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#### The **Teacher Topics** section

(<u>www.katy.isd.tenet.edu/pathways/tchertop.htm</u>) provides links to organized indices of sites for teachers, professional resources/organizations, lesson plans, research, reference, quiz tools, Internet, and Webmaster resources.

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#### The Classroom Connections section

(<u>www.katy.isd.tenet.edu/pathways/connections</u>) provides parents and students with information about such things as upcoming field trips, supply lists, major projects, and useful Internet resources for the classroom. These pages are created and maintained by the classroom teacher, grade level, or department.

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Tech Talk

The **Tech Talk** section (<a href="www.katy.isd.tenet.edu/pathways/techtalk">www.katy.isd.tenet.edu/pathways/techtalk</a>) features the Katy ISD Instructional Technology Department's newsletter. Highlights include articles about the use of technology in Katy ISD schools, technology tips, and curriculum resources.

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## Students In Charge

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#### **Training**

- Manuals
- In-Service
- Just In Time Training



#### Planning and Organization

- Planning Meetings
- Meet with vendors
- Make arrangements
- Office assistance

### Real Help for the Help Desk

# Students in Charge

### **Opportunities For All Ages**



**Special Education Classes** 



**Special Needs** 



Gifted Leadership Program



**Self Image Needs** 



**Belonging Needs** 



**Fast Workers** 



**Beta Club/Honor Society** 



**Organizations** 



Philanthropic Groups



**Capstone Students** 



For Credit



**Income Needs** 

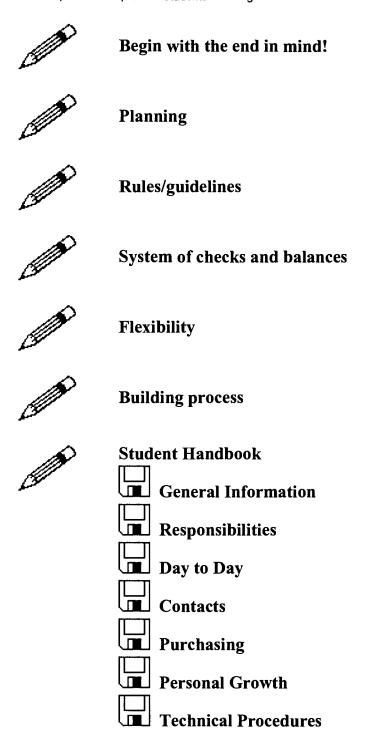


Real World Job Experience

Real Help for the Help Desk

# Students in Charge

**Structuring the Programs** 



Jessamine County Schools District Technology Office Hiring Procedures



Student employees must be recommended by a teacher or staff member.



Student must be a member in good standing with their school STLP.



Students must fill out an application.



Student must get 2 letters of recommendation.



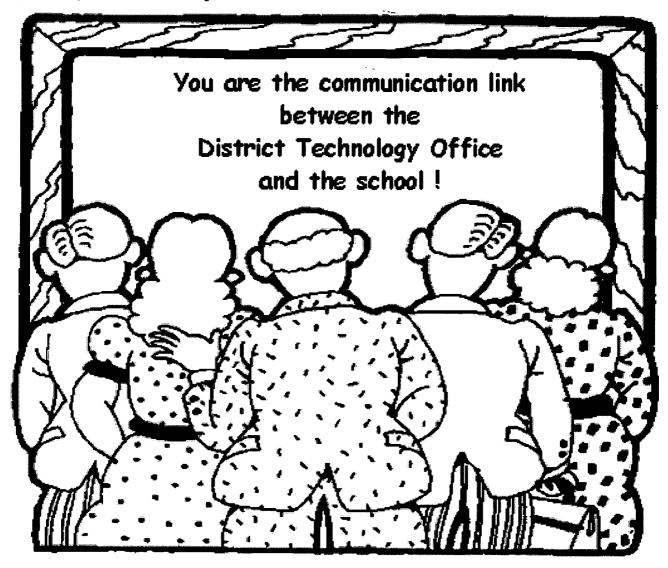
Student must submit application, resume, and letters of recommendations to the District Technology Office.



Student must schedule an interview.



Student must attend orientation training.



### Jessamine County District Technology Office Expectations of Student Workers



Keep a weekly time sheet



Check email daily as most information is relayed this way.



Adhere to school dress code



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Be pleasant to co-workers and visitors to the District Technology Office



Keep a portfolio of their work



Clean up after themselves



Attend training sessions



Call if unable to work at a scheduled time



Always be courteous and professional in each work environment

### Jessamine County Schools District Technology Office Student Work Procedures

### Procedure Upon Arrival at Work:



Check in with the Help Desk Coordinator



Check work folder for the specific school where you will be working that day



Look over Help Desk Tickets to make sure you understand the specific problems to be addressed.



Check with MAC or PC technician to explain what you would do to solve each Help Desk ticket.

### **Embedded Secure Document**

The file file:///F//PRESENTS/barrett/barrett.pdf is a secure document that has been embedded in this document. Double click the pushpin to view barrett.pdf.

### Click to open author's original document.

Creative Use of Cyberspace: Training Teachers for Inclusion

Paper Presented at the National Education Computing Conference

Robin S. Barton, EdD

Mikki Garcia, EdD

Kim Simshauser

June 2000

We believe that infusing technology in courses increases faculty and student creativity and experiential learning by breaking down the barriers of traditional instruction and building learning communities. Doing so can be especially effective for future or current general education teachers learning how and expected to include students with disabilities in classroom experiences of all kinds. Therefore, we redesigned the required course, "Teaching and the Exceptional Child" that introduces future general educators to strategies for teaching students with disabilities in general education classrooms.

Our collaboration began four years ago as an effort to save time and to use our complementary skills and knowledge. As part of an accreditation process, we developed a generic syllabus for faculty who teach this course, that included (a) a choice of textbooks, (b) the catalog and course description, (c) course goals, outcomes and objectives, (d) suggested activities and assignments, and (e) a bibliography. As faculty often do, we then found ourselves with too little time and too much to do, so we divided our course preparation to make best use of our talents. Dr. Garcia wrote lecture notes and study guides while Dr. Barton developed the related slide presentations and assembled supporting materials (e.g., relevant articles, videos, and activities, required special education forms). When the opportunity to develop a WebCT course occurred, we took advantage of it. With the assistance of our instructional technology support specialist, Kim Simshauser, we transformed the slide presentations, study guides and related materials into instructional modules. And so it grew and continues to grow.

At Armstrong Atlantic State University (AASU), "Teaching and the Exceptional Child" fulfills the Georgia Professional Standards Commission requirement for initial teacher certification. Students include both undergraduates and persons seeking Georgia teacher certification, many of who move here from states where this course is not required.

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### **Work Procedures:**



When you arrive at the school, remember to check in with the STC/TRT.



Introduce yourself to the teacher/staff in the room/office where you are working.



Be willing to call from individual schools to receive additional technical support for problems.



Upon completion of the work assignment, explain to the teacher/staff what was done.



If the problem cannot be resolved, explain the next step or action.



### Clean up after yourself and put things back!



Before proceeding to the next Help Desk Ticket, write a detailed explanation of the steps taken to resolve the problem.



Upon returning to the District Technology Office, report each specific problem you worked on or the specific steps which need to be taken to complete the job.

"Teaching and the Exceptional Child" prepares teachers to teach students with disabilities in general education classrooms. The course includes twelve academically rigorous course modules with (a) online narrated slide lectures, (b) video clips of interviews with parents, teachers and students with disabilities, (c) text-based study guides, (d) links to content-related web sites, (e) links to definitive articles from professional journals and other sources, (f) access to the AASU library's electronic reserve system, and (g) interviews with special educators, special education faculty and specialists in the various disciplines.

The assignments for each module include chapter readings with focus questions and case studies that require comprehension, analysis, synthesis and evaluation of required readings. Activities require students to reflect on readings and integrate their learning with their prior knowledge and evaluate it from the perspective of future general education teachers. For example, in Module Five, students post responses to the following: "In the LD Forum on the course bulletin board, begin a dialogue with your classmates about the questions, ideas, or concerns that you have about teaching students with learning disabilities and/or attention deficit disorder in your class. Be age and subject specific, especially if you teach or plan to teach middle or secondary students. What would help you be more effective?" Another activity requires students to read articles from professional journals, to summarize the article (not just repeat the abstract!) and state how what they learned may help them as general educators.

The students who select the web-enhanced or online sections of the course often do so because they are nontraditional students, many with full time jobs, who like the flexibility of online learning. The syllabus, the course calendar and assignments clearly describe the minimal levels of student participation. For satisfactory completion of the course, students must accumulate enough points to earn a grade of C, the minimum that the AASU College of Education accepts for credit toward degree completion. Students earn up to 20 points for each of the twelve learning module completed. Required course activities include two projects, an annotated bibliography, four tests, and a group online presentation.

As we designed the course, we carefully examined the knowledge base and the learning processes required to meet the course objectives. We choose each activity for its contribution to the accomplishment of course objectives. Then we choose the appropriate technology for accomplishing the task. For example, to account for the varying learning styles of students, we provided opportunities for both text-based and experiential learning activities. Students may access the knowledge base either through reading or by listening to online narrated slide lectures. Many activities also involve posting answers to critical thinking questions on the course bulletin board, and then reflecting on and discussing answers to these questions with classmates. Students may also access the publisher's companion website and online study guide.

Two examples of our use of technologies involve online research and student presentations. Students locate and evaluate web sites and use the University library's online electronic reserves and electronic database to locate articles for an annotated bibliography. The text includes 16 chapters only 12 of which are included in formal learning modules. For the other four chapters topics and those in the Appendix, we use the WebCT group assignment tool to randomly assign students to chapter groups. Then each group uses the bulletin board, chat room or other communication modalities to collaborate on an online presentation based on self-selection of salient material from their assigned readings. Their classmates then may use to learn that material for their chapter study.

The course also requires students to make appropriate and effective use of external resources. Narrated slide lectures for most modules provide foundation knowledge in the WebCT environment. In addition,



the text chosen has a companion website and online learning guide. Students also must do either web-based research using the Georgia Peachnet's Galileo databases or real-time library research using ORCA. They may also access brief video clips from the publisher that support the text, audio interviews with other faculty, as well as virtual field trips to community sites. Additional interviews and virtual field trips are in the planning stage. Students interview general educators, special educators and persons with disabilities. Students also may attend optional seminars where may view and discuss videos, engage in case-based problem solving, or engage in lively discussions with invited guests.

A link to the WebCT 2.0 Student Tutorial is on the student's course home page. On the WebCT course Listing page is a link to AASU WebCT support. Students are not required to learn and use html. They are encouraged to use tools like Netscape Composer. Netscape is the AASU standard browser. Those who want to develop their web design skills can access the WebMonkey home page [http://hotwired.lycos.com/webmonkey/index.html] and to ZDNet's Internet Basics and Web Design site [http://www.zdnet.com/zdhelp/stories/main/0,5594,2236427-4,00.html]. This page can also be accessed from the course "First Things First" page.

At the beginning of the course, students receive a letter that sets the stage for their online learning experience. In order to confirm their registration, they send an email to the instructor where they introduce themselves and tell why they are brave enough to venture into online learning. Then they receive a welcome letter explains how to access AASU's WebCT site, the syllabus, and the "First Things First" page. The welcome email also includes their first assignment. Students are also forewarned of the need to have access to these tools: (a) MS Word or Corel WordPerfect (All assignments are written in APA format using one program or the other.), (b) email (Outlook or Netscape) with assignments sent as, (c) American Psychological Association IV citation guidelines, (d) electronic reserves at the AASU library, (e) MS PowerPoint (nothing fancy required, just the basics) for the group project, (f) virus detection software (All emails need to be scanned before sending.), and (g) a WWW search engine. If they do not have these resources at home, they may access them in one of the computer labs on campus.

Our experience has taught us that the face-to-face versions of the course, which we both previously taught, were less rigorous than the web-enhanced or fully online courses we now teach. Why? First, the face-to-face course required less self-evaluation and less concrete evidence of critical thinking than either the web-enhanced or the web-centric versions. The web-based activities encourage students to think more critically and to reflect more on their learning. Each learning module also requires extensive writing and independent self-directed learning. The students, therefore, rely on an instructor less and more on their own resources to read, research, evaluate and integrate information. Lastly, student behavior confirms our observation since they constantly complain about how much work they have to do and in the same breath, tell us how much they are learning.

Further evidence of rigor is the syllabus, which clearly reveals course objectives in compliance with the principles of the Georgia Professional Standards Commission, the Southern Association of Colleges and Schools, and the National Council for Accreditation of Teacher Education. AASU's College of Education is NCATE accredited. Minimal levels of student participation are clearly stated in the syllabus in course outcomes, in student assignments and in student responsibilities. Course rigor also derives from the learning activities, which require students to build a knowledge base and then employ critical thinking strategies. Thus, students are enticed by ready access to materials and by discovering interesting and informative web sites. They often complain about how much time they spend on a module because they get involved in investigating the resources provided.



Keeping abreast of the constantly evolving knowledge base as well as the regulatory and legal mandates of special education law, challenges instructors who desire to keep current in these areas and to focus on preparing their students well. Therefore, we also wanted to be able to adapt the course modules for various levels, e.g., teachers in the field needing certification and undergraduates with no teaching experience and less academic maturity. For these reasons, we developed adaptable, multipurpose instructional modules that could be used in various contexts: (a) as a web-centric university-level course, (b) as a web-enhanced, traditional classroom-based course, (c) as an independent study course, or (d) as web-centric or web-enhanced staff development for currently employed teachers. During the spring 2000 semester, we taught three sections of "Teaching and the Exceptional Child:" (a) a web-enhanced, 15-week course, (b) a web-enhanced 7-week course, and (c) a web-centric (fully online) 15-week course.

Wending our way through this complex process made us carefully examine the academic rigor of everything we included so that materials and activities would meet the needs of a wide range of students and provide the rigor to ensure quality learning. For example, in the 7-week class, where we know students lack the academic maturity for self-directed learning, we offer more face-to-face instruction while still requiring active participation in web-based learning. The 15-week web-enhanced course has a weekly seminar to discuss course content, view supplementary videos or hear guest speakers. Seminar attendance is not required for the web-centric course; however, the seminars are open to them as well.

An example of a non Web-based assignment with content robustness is one where students interview a person with a disability. The interview results in written report on what the person does during the course of a regular day. The students then reflect on (a) sources of stress observed, (b) evidence of the individual's attitude toward the disabling condition, (c) evidence of support from family, teachers and/or peers, (d) the extent of the individual's independence/dependence, and (e) the person's emotional, social, and educational well being. In addition, they summarize their personal reactions reporting what they learned and the impact of the experience on them. Our goal is not only to have students develop intellectually but also affectively by deepening their understanding of persons with disabilities.

Another content-robust, non Web-based assignment requires students to interview three teachers asking each three questions about their classroom management strategies. Then, after reading the text and/or listening to the lecture, they write a 1-2-page paper reflecting on the 5 classroom management strategies discussed by the teachers and by the text authors that they think might help them in their classrooms.

A content rich Web-based assignment asks them to examine cartoons of Calvin and Hobbes and then to visit the Calvin and Hobbes web site. Using what they learn from reading the chapter, they decide whether they believe Calvin is a gifted youngster and state the reasons for their decisions. Then to make matters more interesting, they report how they would manage Calvin's behavior as Calvin's father. This written assignment integrates understanding the humor of the delightful Calvin and Hobbes with knowledge of gifted youngsters and the parenting strategies their parents need.

On the CEUG2100 Tools Page is a link to UCLA Library's guidelines for evaluating web sites. Throughout the course, students are exposed to web sites that provide them with information that supports the content of course. One project assignment is to select five web sites and evaluate them using the guidelines provided. That process includes both the evaluation process and validation process. In another assignment they enter "attention deficit hyperactivity disorder" in a search engine of their choice and then evaluate the validity of the web sites against information in their text and other resources and explain the basis for their decisions about the validity.

Most students who have taken the course to date are nontraditional students who work and attend classes in the evenings. Although they have been offered the opportunity to use the course chat room, they have chosen not to do so because it is very difficult for them to find agreed-upon times to chat. Therefore, to date we have not used the chat room. However, we make extensive use of Email and the bulletin board. Students especially like the bulletin board because it allows them to reflect before responding and to read respond to other students' postings. Usually the lively dialog among the students requires little comment from the instructor, other than an enthusiastic one about the interest and complexity of the discussion. They use either external email or WebCT email to send assignments as attachments. The instructor usually interacts daily with various students by email or bulletin board postings and with groups of students by the bulletin board. Each student receives personal emails discussing their work performance. Often the instructor uses the editing functions in Microsoft Word to insert comments as well. Students also have access to WebCT home pages. We have not discovered a course activity suitable for the whiteboard, but rest assured if we do, we would use it because the bulletin board has served us so well.

We believe that "Teaching and the Exceptional Child" has exemplary breadth and depth of content for an initial preparation, teacher-education course. Students interact with the content about exceptional learners, and with each other and the instructor, in complex and meaningful ways. Clearly, this course goes far beyond just the inclusion of a course syllabus and the instructor's lecture notes. We invested conscientious effort in building a learning community where students learn not only from the instructor and the learning modules but also from each other and from external sources. Both non web-based and web-based assignments are (a) clearly stated, (b) cause students to apply course concepts and skills and (c) require critical thinking. In addition, web-based assignments require students to evaluate and validate web-based information. They also clearly specify the student's required work products. The WebCT modules lead students through paths of information and activities in logically organized, manageable segments. Students interact with each and with the instructor often using asynchronous tools, such as the bulletin board and email. The instructor actively participates in the course, not only interacting with students but also constantly revising content and assignments to meet students' needs. Many students' web access is limited by slow download times; therefore, digitized images and graphics are used only when they add value to the learning process. Students' learning is assessed using the built-in WebCT quiz features as well as written activities that require reading, research and critical thinking. We both have come to realize the value added to a course by the judicious and appropriate use of the web learning environment. We believe our students value it as well.

Access is an important issue in web-based instruction, especially access for students with disabilities enrolled in the course. In creating this course, we produced alternative versions of the content to allow students with hearing and visual impairments to participate. All they need to do is to inform us of their needs and we will provide adapted content to accommodate them. We made transcripts of all audio lectures and videos and used tags to identify images for text reading software.

We believe that we are on the brink of an evolution in higher education. This evolution will open higher education to more people and allow each student to engage more actively in both designing and implementing his or her own course of study. We are excited to be part of a process that is changing the teaching-learning paradigm to one where students participate with us in a technology-enriched learning community.

### Faculty Instructional Technology Skill Sets

Operating System Skills

·	Beginning	Intermediate	Advanced
General Computer Skills	<ul> <li>Identify computer parts</li> <li>Use and locate a printer</li> <li>Navigate and select menuitems</li> </ul>	Back up files to the server	Remove viruses from a floppy disk and the hard drive
Operating System Skills	<ul> <li>Log on and navigate both platforms</li> <li>Learn to use either Mac OS8 or Windows 95/98</li> </ul>	Begin a document on one platform and finish on the other     Rename files	<ul> <li>Convert files between platforms and file types</li> <li>Learn how to use both Mac OS8 and Windows 95/98</li> </ul>
Computer Troubleshooting	<ul> <li>Check electrical and peripheral connections</li> <li>Check keyboard and mouse cables</li> <li>Conduct a "forced quit"</li> <li>Restart the computer after a system crash</li> <li>Accurately report problems to the help desk</li> </ul>	Clear printer jams     Check status of printer with the print monitor	

### **Production Skills**

T TOUUCHOII SKI	113		
Word Processing Skills	Locate and open an existing document     Create an MS Word or ClarisWorks file     Understand and use tool bars     Cut, copy, insert and move text     Use grammar and spell check     Print files and adjust page setup as needed     Save files to multiple locations	<ul> <li>Change the formatting of a document</li> <li>Create tables</li> <li>Add graphics to a document</li> <li>Use pre-existing templates</li> <li>Save a .doc file as another file type</li> </ul>	Create a template Set up and use mail merge Integrate a spreadsheet or a chart  Create a template style="color: red; color: r
Database Software Skills Pentamation FileMaker Pro TreviAC	<ul> <li>Search and retrieve data</li> <li>Sort fields by specific data</li> <li>Save the database file</li> <li>Print a prepared report</li> </ul>	<ul> <li>Enter and edit data in a pre-existing file</li> <li>Add new fields to a database</li> <li>Create new layouts</li> <li>Create a new database file</li> </ul>	<ul> <li>Define relationships between fields and files</li> <li>Use calculations</li> <li>Use summary fields</li> <li>Set up and use mail merge</li> </ul>



Spreadsheet Software Skills	Open an Excel workbook Enter and edit data in a pre-existing workbook Save the workbook Print a prepared report	<ul> <li>Insert, modify and delete rows and columns</li> <li>Create or modify the layout</li> <li>Create a range</li> <li>Enter a formula</li> <li>Sort data</li> <li>Create a new worksheet</li> <li>Create a chart</li> </ul>	Modify chart layout     Import and export information     Import and export data
Presentation Software	Open a PowerPoint file     Create a new presentation in both slide and outline format     Present a prepared document	<ul> <li>Format a presentation using a template</li> <li>Use transitions and builds</li> <li>Print handouts</li> </ul>	<ul> <li>Create user notes</li> <li>Add graphics, charts and multimedia</li> </ul>

### **Internet Skills**

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Web Skills	<ul> <li>Launch Netscape</li> <li>Use hyperlinks</li> <li>Find a specific web site by typing in the URL</li> <li>Use basic search engine skills to find information</li> <li>Use bookmarks</li> </ul>	<ul> <li>Use bookmarks</li> <li>Download files from the Internet</li> </ul>	<ul> <li>Use advanced search engine skills to find information</li> <li>Organize, import and export bookmarks</li> </ul>
Email Skills	Send and receive email     Open an attachment	<ul> <li>Enter setting information</li> <li>Send attachments</li> <li>Utilize features like forward and reply</li> <li>Set up signature files</li> </ul>	Utilize address book and create distribution lists     Create alternate mail folders and use filters     Subscribe to and participate in listsery discussion groups

### Miscellaneous Skills

Voice Mail Skills	<ul> <li>Retrieve messages</li> <li>Send messages</li> <li>Record a greeting</li> </ul>	<ul> <li>Record an extended absence greeting</li> <li>Use advanced features such as forwarding and group distribution lists</li> </ul>	
Audio-Visual Skills	Be able to operate the following:     VCR     Overhead projector     Photo copier	Be able to operate the following: Classroom network hookups Laserdisc player CD player Video projector Fax machine Connect a laptop computer to the video system	Be able to operate the following:     Equipment in the EPI center



### Faculty Instructional Technology Skill Sets

Operating System Skills

	Beginning	Intermediate	Advanced
General Computer Skills	<ul> <li>Identify computer parts</li> <li>Use and locate a printer</li> <li>Navigate and select menu items</li> </ul>	Back up files to the server	Remove viruses from a floppy disk and the hard drive
Operating System Skills	<ul> <li>Log on and navigate both platforms</li> <li>Learn to use either Mac OS8 or Windows 95/98</li> </ul>	Begin a document on one platform and finish on the other     Rename files	Convert files between platforms and file types     Learn how to use both Mac OS8 and Windows 95/98
Computer Troubleshooting	<ul> <li>Check electrical and peripheral connections</li> <li>Check keyboard and mouse cables</li> <li>Conduct a "forced quit"</li> <li>Restart the computer after a system crash</li> <li>Accurately report problems to the help desk</li> </ul>	Clear printer jams     Check status of printer with the print monitor	

### **Production Skills**

Word Processing Skills	Locate and open an existing document Create an MS Word or ClarisWorks file Understand and use tool bars Cut, copy, insert and move text Use grammar and spell check Print files and adjust page setup as needed Save files to multiple locations	<ul> <li>Change the formatting of a document</li> <li>Create tables</li> <li>Add graphics to a document</li> <li>Use pre-existing templates</li> <li>Save a .doc file as another file type</li> </ul>	Create a template     Set up and use mail merge     Integrate a spreadsheet or     a chart
Database Software Skills Pentamation FileMaker Pro TreviAC	<ul> <li>Search and retrieve data</li> <li>Sort fields by specific data</li> <li>Save the database file</li> <li>Print a prepared report</li> </ul>	<ul> <li>Enter and edit data in a pre-existing file</li> <li>Add new fields to a database</li> <li>Create new layouts</li> <li>Create a new database file</li> </ul>	<ul> <li>Define relationships between fields and files</li> <li>Use calculations</li> <li>Use summary fields</li> <li>Set up and use mail merge</li> </ul>



Spreadsheet Software Skills	Open an Excel workbook     Enter and edit data in a pre-existing workbook     Save the workbook     Print a prepared report	<ul> <li>Insert, modify and delete rows and columns</li> <li>Create or modify the layout</li> <li>Create a range</li> <li>Enter a formula</li> <li>Sort data</li> <li>Create a new worksheet</li> <li>Create a chart</li> </ul>	Modify chart layout     Import and export information     Import and export data
Presentation Software	Open a PowerPoint file     Create a new presentation in both slide and outline format     Present a prepared document	<ul> <li>Format a presentation using a template</li> <li>Use transitions and builds</li> <li>Print handouts</li> </ul>	<ul> <li>Create user notes</li> <li>Add graphics, charts and multimedia</li> </ul>

### **Internet Skills**

Web Skills	<ul> <li>Launch Netscape</li> <li>Use hyperlinks</li> <li>Find a specific web site by typing in the URL</li> <li>Use basic search engine skills to find information</li> <li>Use bookmarks</li> </ul>	Download files from the Internet	<ul> <li>Use advanced search engine skills to find information</li> <li>Organize, import and export bookmarks</li> </ul>
Email Skills	Send and receive email     Open an attachment	<ul> <li>Enter setting information</li> <li>Send attachments</li> <li>Utilize features like forward and reply</li> <li>Set up signature files</li> </ul>	<ul> <li>Utilize address book and create distribution lists</li> <li>Create alternate mail folders and use filters</li> <li>Subscribe to and participate in listserv discussion groups</li> </ul>

### Miscellaneous Skills

Voice Mail Skills	<ul> <li>Retrieve messages</li> <li>Send messages</li> <li>Record a greeting</li> </ul>	<ul> <li>Record an extended absence greeting</li> <li>Use features such as forwarding and group distribution lists</li> </ul>	
Audio-Visual Skills	Be able to operate the following:     VCR     Overhead projector     Photo copier	Be able to operate     classroom video     equipment (Black box)     Connect a laptop     computer to the video     system	Be able to operate EPI     Center equipment



Optional Additional Skills

·	Beginning	Intermediate	Advanced
HyperStudio	<ul> <li>Open and navigate through a stack</li> <li>Understand the concepts of button, card, stack, text and home</li> </ul>	<ul> <li>Create a new stack</li> <li>Add cards to an existing stack</li> <li>Add functional buttons</li> <li>Add text and graphics (both paint and draw) objects</li> <li>Transport a stack between platforms</li> </ul>	<ul> <li>Add a sound to a stack</li> <li>Add a video clip to a stack</li> <li>Create an animation</li> </ul>
Pentamation (Student records)	<ul> <li>Log into Pentamation &amp; properly exit</li> <li>Query a student's records</li> <li>Print an individual screen</li> </ul>	<ul> <li>Use the ring menu</li> <li>Query multiple student records</li> <li>Print a predefined report</li> <li>Select a printer</li> </ul>	Use the FastPath option     Use Boolean operators to print a report with multiple criteria
MCL Lab Equipment	<ul> <li>Starting the system and identify parts of the teacher's position (ASC DI 8 Console)</li> <li>Use and locate Master PC, VCR, LaserDisk and Vizcam</li> <li>Knowledge of the operation software (The Main Screen, The Menu)</li> </ul>	<ul> <li>Create, save and load a new class file</li> <li>Enter and modify students' names to a class list</li> <li>Create, save and load group files</li> <li>Assign sources to program groups</li> <li>Communicate with a single student, group of students or with a conference group</li> <li>Use pairing, conference mode, and telephone mode</li> <li>Monitor students and remote control over their recorders and computers</li> <li>Select a student as a model voice</li> <li>Load a program audio or video tape, CD, laser disc or CD-ROM</li> </ul>	Using a Response Analyzer  Use Audio program Editor  Use Test and Quick Test  Use Response Retrieval with Test Fast erase tapes



## Claris Home Page

- Working in a Claris
   Home Page document
- Opening HTML files
- Using Edit Page mode
- Cutting, copying, and pasting
- Using the toolbars and palettes
- Using the object and link editors
- Resizing elements using the mouse
- Previewing your work
- Using Preview Page mode and previewing your Web page in a browser

- Adding extra HTML to your page
- Using Edit HTML Source mode
- Changing the text display in Edit HTML Source mode
- Adding attributes to an element
- Adding images to your Web page
- Adding HTML to text
- Adding HTML to the document tags
- Setting the color and background of your Web page
- Using an image for the background
- Printing your Web page
- Using the Site Editor

- Adding text to your Web page
- Adding tables to your Web page
- Using Claris Home Page libraries
- Creating links and anchors
- Adding frames to your Web page
- Adding forms to your Web page
- Connecting to a FileMaker Pro database
- Adding multimedia to your Web page



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### **Internet Searching Classes**

Class 1	Learn the different types of Internet search tools Learn tips and techniques for effective searching Learn to use AltaVista, Hot Bot or Excite	Prerequisites: None
Class 2	Use Boolean logic to refine a search	Prerequisites: Mastery of the Internet class 1 skills
Class 3	Learn to evaluate Internet web sites	Prerequisites: None
Class 4	Learn to use a meta-search engine: Metacrawler, Dogpile or Inquire Pro Use specialized search tools	Prerequisites: Mastery of the Internet Class 1 skills
Class 5	Learn to create, edit and organize your bookmarks	Prerequisites: Mastery of the Internet Class 1 and 2 skills
Class 6	Download files from the Internet Use and print Adobe Acrobat files	Prerequisites: Mastery of the Internet Class 1 and 2 skills
Class 7	Learn about Internet security and how to recognize a secure site Learn how to cite Internet sources	Prerequisites: Mastery of the Internet Class 1 and 2 skills



### **Internet Searching**

Class 4

New Trier High School
Staff Development

**Training Guide** 

Prepared by

**Instructional Technology Department** 

• For assistance, please call the Help Desk @ ext. 2624



### **Internet Searching – Class #4**

### **Course Objectives:**

- 1. Use a meta-search engine
- 2. Learn about specialized search tools



(go to http://nths.newtrier.k12.il.us/library/isearch/isearch4.htm)

### What is a Meta-search Engine?

Meta-search engines pose your question to up to a dozen or more search engines and directories simultaneously. They can be efficient, but tend to be slower and not as precise as single search engines.

- MetaCrawler: Sends your keywords to ten different search tools, then collects and displays the best response from each (http://www.metacrawler.com)
- **Dogpile**: Searches the Web, newsgroups, stock quotes, ftp sites and others. (http://www.dogpile.com)
- InquirePro: Developed by the students at the Illinois Math and Science Academy, this meta-search engine searches AltaVista, Excite, Hotbot, Lycos and Yahoo. (http://toolkit.imsa.edu/search/).

### Using InquirePro

### inquirePro

InquirePro is a meta-search engine developed by the students at the Illinois Math and Science Academy. It will do the following:

- Save you time by searching multiple engines simultaneously and returning citations without the time-consuming downloading and distracting clutter of advertisements
- Give you access to multiple search strategies without the need to enter the detailed syntax required by individual search engines
- Enable you to control the ranking and organization of the results returned by individual search engines
- Identify sites that returned multiple citations so you can search them more thoroughly
- Automate in-depth searches of individual sites\*

InquirePro searches AltaVista, Excite, HotBot, Lycos and Yahoo, offers multiple options and settings, and will allow you to limit your search to images or sounds. Its Internet Search Center offers great information on how to formulate searches, reviews of search engines, and a tutorial. Best of all, it has no advertising!

\*From the IMSA Internet Search Center Home Page (http://toolkit.imsa.edu/)



### Specialized Search Tools\*\*

### **Specialty Search Engine**

• SearchPower (http://www.searchpower.com): A search engine for specialized subjects

### **Graphics and Multimedia**



### Graphics and Multimedia

- AltaVista (http://www.altavista.com/): Click on Images, Video or Audio to restrict your search.
- Beaucoup (http://www.beaucoup.com/): Searches for art, music, sounds.
- The Image Base (http://www.thinker.org/imagebase/index-2.html) Searches the Fine Arts Museums of San Francisco.
- Clip Art Searcher (http://www.webplaces.com/search/): Use several different search engines to find graphics, sound and video files.
- Electric Library (from the NTHS Library home page): http://nths.nttc.org/library/home2.htm): Click on Pictures to search for graphics files.
- MP3.com (http://mp3.com/): All things about MP3, including thousands of legal MP3 files.
- MP3meta (http://www.mp3meta.com/): Search all the major MP3 search engines at once through this metasearch service from SavvySearch.

### **Newsgroup Searching**

• **Supernews** (http://www.supernews.com/): Searches newsgroup discussions, with archives...

### **Mailing Lists**

Looking for folks with similar interests? Join an Internet listserv. Some good places to start looking:

- List of Lists: (http://catalog.com/vivian/interest-group-search.html): Search for lists of interest.
- Liszt (http://www.liszt.com/: The granddaddy of listserv searching, still a good place to find subject listservs.
- Publicly Accessible Mailing Lists (PAML) (http://www.neosoft.com/internet/paml): One more good place to find mailing lists.



### **Internet Shopping**

- **Dealpilot** (http://www.acses.com/): A buying service for books, CD's, videos and DVD's, which checks about 25 Internet stores to find the best price.
- **Buyer's Index** (http://www.buyersindex.com): Lists information from about 9,000 mail order companies, web shopping sites and classified ad sites.
- mySimon (http://www.mysimon.com): The largest comparison shopping service on the Internet; searches over 1500 merchants

### **Science Search Engines**

- **Biocrawler** (http://www.biocrawler.com/): Directory and search engine for biological information.
- Chemie.DE (http://www.chemie.de/): Directory and search engine for information about chemistry. Click on the "search engine" link on the home page to search.
- Biolinks (http://www.biolinks.com/): A search engine for scientists, with links to
  journals, organizations, companies and more. It spiders the web and has humancategorized results.



### **Medical Search Engines**

### Medicine

- MedHunt (http://www.hon.ch/MedHunt/): MedHunt uses both humans and web crawling to build its index of medical information. Searches can be narrowed by region, and a French interface is available.
- Citeline.com (http://www.citeline.com/C1SE/search): Provides a focused medical search, using a pre-screened index of medical sites.
- Medical World Search (http://www.mwsearch.com/): Listings are created by spidering pages from a select group of medical sites, in order to keep results tightly focused.

### Financial Searching

With the sites listed below, you enter the name of a company or a stock symbol, and then you'll be linked to a page with quotes, financial data and more.

- DailyStocks (http://www.dailystocks.com/)
- JustQuotes.com (http://www.justquotes.com/)
- TradingDay (http:tradingday.com/)



### Law

- Oyez, Oyez (http://oyez.nwu.edu/): U.S. Supreme Court multi-media database sponsored by Northwestern University.
- FindLaw (http://www.findlaw.com/): Directory of legal web sites.
- LawCrawler (http://www.lawcrawler.com/): Powered by an AltaVista search engine, delivers information only from sites identified as dealing with law issues.

### Web Rings

Web rings are groups of sites linked together around a similar topic. Each would install a special code on its pages, making it easy to connect to the next site in the ring. You can search the rings for particular areas of interest.

- Bomis (http://www.bomis.com/)
- WebRing (http://www.webring.org/)

### Search Problems

Try searching for some of the following problems using both the meta-search engines and the specialized ones.

- Find a web ring of Internet sites about Australian history.
- A few years ago, the Reverend Jerry Falwell sued *Hustler* magazine for libel, claiming that he had been defamed by a story the magazine had run. He received damages, but *Hustler* appealed. Find the Supreme Court case which dealt with this problem. What was the verdict of the court?
- Cystic fibrosis has long been a difficult disease to manage for young patients. Find some information about the new treatments for cystic fibrosis which use so-called "orphan" drugs.
- Where can you buy women's cotton sweaters online?
- You are preparing a web site for a mythology project your students are working on. Find a picture of Achilles which you can use on this page.
- Bluegrass is one of your favorite types of music. Find a listsery devoted to bluegrass.



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<sup>\*\*</sup>Much of the information in this section came from Search Engine Watch, an extraordinarily useful site for anyone who does it a lot of Internet searching. It can be accessed at http://www.searchenginewatch.com

### **Internet Searching**

### Class 5

New Trier High School
Staff Development

**Training Guide** 

Prepared by

**The Library Staff** 

• For assistance, please call the Help Desk @ ext. 2624



### **Internet Searching: Class 5**

### **Course Objectives:**

- 1. Learn to create a book mark
- 2. Learn how to edit and organize bookmarks
- 3. Learn how to create and use multiple bookmark lists
- 4. Learn how to check the currency of your bookmarks



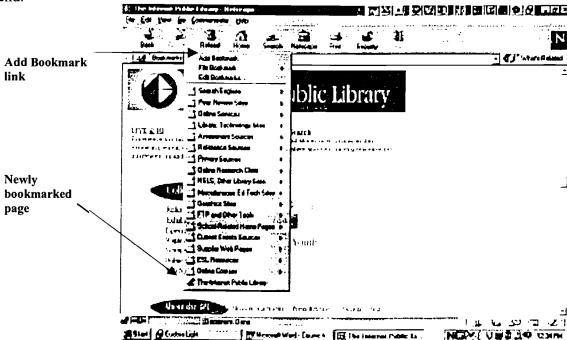
New Trier High School 2

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### Creating a Bookmark

To book mark a web page:

- Go to the web page you want to bookmark.
- Click Bookmarks.
- Choose Add Bookmark
- The name of the currently displayed page is added as the last item in the Bookmark menu.



To revisit a bookmarked web page:

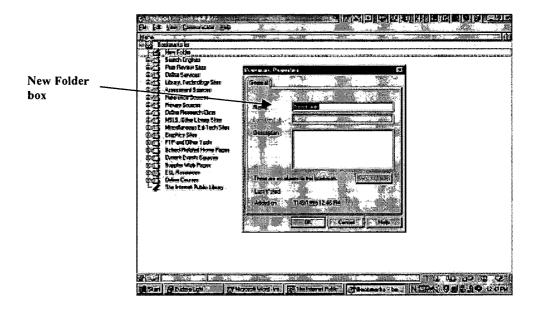
- Click Bookmarks.
- Choose a bookmarked page.

### **Editing and Organizing Bookmarks**

To organize your bookmarks into folders:

- Click Bookmarks and choose Edit Bookmarks.
- Click the item just above where you want to put a new folder
- Open the File menu and choose New Folder.
- Give your new folder a name and click OK
- Drag your bookmark into it.





### To reorder bookmarks:

- Click Bookmarks and choose Edit Bookmarks
- Drag any bookmark, folder, or separator to reposition it

### To delete a bookmark:

- Click Bookmarks and choose Edit Bookmarks.
- Click to select a bookmark
- Press the Delete key

### To file a bookmark on the fly:

- Go to the web page you wish to bookmark
- Click Bookmarks and choose File Bookmark
- Choose a folder in which to store a bookmark for the current page

### BEST COPY AVAILABLE





### **Keeping Multiple Bookmark Lists**

You can have more than one bookmark list, each with its own set of titles linked to favorite pages. Only one bookmark list can be active at a time.

To save a bookmark list:

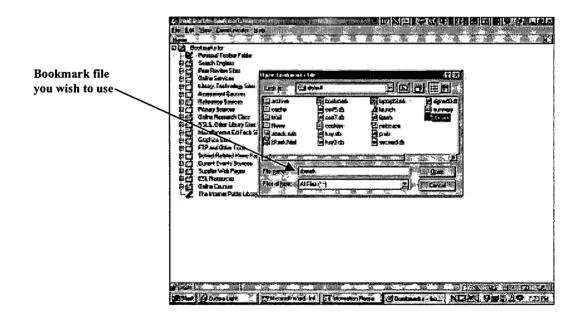
- Click Bookmarks and choose Edit Bookmarks.
- Open the File menu and choose Save As.
- Give the file a name
- The list is saved as an HTML-formatted file





### To open and use a bookmark list:

- Click Bookmarks and choose Edit Bookmarks.
- Open the File menu and choose Open Bookmarks file.
- The file you open determines what you see in the Bookmarks menu.

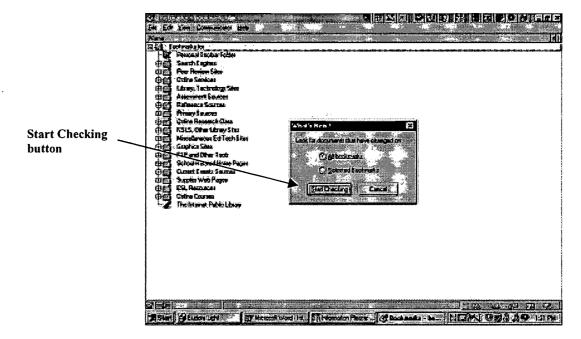


### **Checking the Currency of Your Bookmarks**



To find out if a bookmarked page has been moved or modified since your last viewing:

- Click Bookmarks and choose Edit Bookmarks.
- Select one or more bookmarks. If you want to check all bookmarks, don't select any.
- Open the View menu and choose Update Bookmarks.
- Click All Bookmarks or Selected Bookmarks.
- Click Start Checking.



If a page has changed, Netscape puts a special mark on the page's bookmark icon. If Netscape is unable to verify a page, it puts a question mark on the page's icon.

To change information for any current bookmark or bookmark folder:

Click Bookmarks and choose Edit Bookmarks.

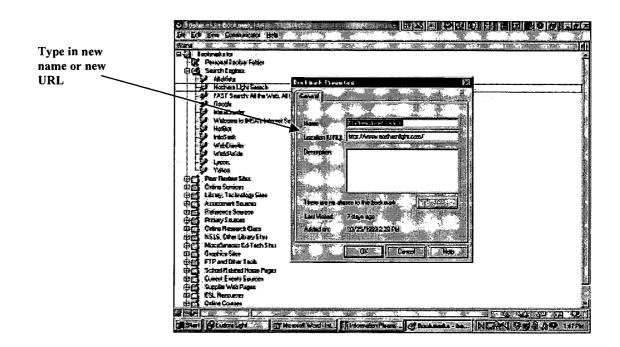
Select a bookmark or bookmark folder.

From the Edit menu, choose Bookmark Properties.

To make a change, type in a new name or URL. (The URL field is dimmed if a folder is selected.

Choose OK.





### **BEST COPY AVAILABLE**



### Overview of the Individual Technology Learning Plan

In the past, New Trier has offered a variety of incentives for staff development in technology. Staff computer purchases have been an ongoing program. The most recent purchase with a training option resulted in more than sixty staff members taking advantage of the program. New Trier has provided free standard software for the staff. Several teachers have been given technology-based projects of excellence. In the past, staff members were paid to attend summer training courses. There was not necessarily a well-organized flow to the courses taken nor was anyone specifically assigned to help a staff member determine his/her needs and shepherd him/her through the process.

The goal of the Individual Technology Learning Plan (ITLP) program developed will be to assist the staff member in reaching a higher level of technology skill as appropriate for his/her position at New Trier. The development of an individual technology learning plan for a staff member would improve the overall technology staff development program at New Trier. It will allow us to work with staff members in a more formal way and allow us to more readily assess training needs among the staff as well.

ITLPs will be developed based on the faculty or support staff technology expectations developed by the Greater Technology Committee. The goal of the ITLP would be to assist the staff member in mastering additional skills that will help them in his/her position. In addition to the ITLP, the process will also have teachers complete a classroom technology survey to assess current level of technology integration in the classroom. This same survey will be completed at the end of the ITLP process to be able to document technology growth directly related to student learning.

After a staff member volunteers to work on an ITLP, they will meet with a member of the technology staff to assess current skills against the skill expectations. They would then work with that consultant to review the self-assessment and build a technology learning plan that would best meet his/her individual and departmental needs. The ITLP will count towards satisfying the new staff development requirements for teaching certificate renewal.

The staff member would then participate in staff development courses, self-guided instruction or any other staff development opportunities that would help them complete his/her plan. Throughout the process, the consultant would work with the teacher to ensure that the staff development was appropriate and that the process was moving along smoothly. All ITLPs created would have a practical component to ensure that the staff member understood how to utilize the technology skills within his/her position. The average ITLP would most likely take approximately 30 hours of work to complete. ITLPs will be developed to be completed over either one or two years.

When the training is completed, the staff member would work with the consultant to assess the success of the plan and the effectiveness of the staff member's new skills. When the participant has demonstrated successful completion of the ITLP, the IT consultant would recommend the staff member receive an appropriate stipend for completion. Stipends will range between \$1000 and \$2000 depending upon the amount of skill development.

After the initial completion of an ITLP, the staff member will be encouraged to continue to improve his/her skills through the staff development opportunities available through New Trier. In addition, some of those who complete an ITLP may desire to serve as trainers or consultants in the future. As technology advances and the New Trier skill expectations evolve, those who had already obtained skills from an earlier ITLP would be given modest incentives to upgrade their skills to the new level.

For more information or to volunteer to participate please contact Laura Bizar x2701.



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### Technology Skill Assessment for Jane Q. Trevian

All of the skills that the assessment shows you have are grayed out on the form below. You appear to have most of the skills at the beginning level. This would suggest a plan to obtain the advanced skills.

<b>Operating Syst</b>	tem Skills		
	Beginning	Intermediate	Advanced
General Computer Skills	<ul> <li>Identify computer parts</li> <li>Use and locate a printer</li> <li>Navigate and select menuitems</li> </ul>	Back up files to the server	Remove viruses from a floppy disk and the hard drive
Operating System Skills	<ul> <li>Log on and navigate both platforms</li> <li>Learn to use either Mac OS8 or Windows 95/98</li> </ul>	Begin a document on one platform and finish on the other     Rename files	Convert files between platforms and file types     Learn how to use both Mac OS8 and Windows 95/98
Computer		Clear printer jams	
Troubleshooting	<ul> <li>Check electrical and peripheral connections</li> <li>Check keyboard and mouse cables</li> <li>Conduct a "forced quit"</li> <li>Restart the computer after a system crash</li> <li>Accurately report problems to the help design.</li> </ul>	Check status of printer with the print monitor	
Production Sk		impie	
Word Processing	Locate and open an	Change the formatting	Create a template

Production Ski			
Word Processing Skills	<ul> <li>Locate and open an existing document</li> <li>Create an MS Word or ClarisWorks file</li> <li>Understand and use tool bars</li> <li>Cut, copy, insert and move text</li> <li>Use grammar and spell check</li> <li>Print files and adjust page setup as needed</li> <li>Save files to multiple locations</li> </ul>	<ul> <li>Change the formatting of a document</li> <li>Create tables</li> <li>Add graphics to a document</li> <li>Use pre-existing templates</li> <li>Save a .doc tile as another file type</li> </ul>	<ul> <li>Create a template</li> <li>Set up and use mail merge</li> <li>Integrate a spreadsheet or a chart</li> </ul>
Database Software Skills Pentamation FileMaker Pro TreviAC	<ul> <li>Search and retrieve data</li> <li>Sort fields by specific data</li> <li>Save the database file</li> <li>Print a prepared report</li> </ul>	<ul> <li>Enter and edit data in a pre-existing file</li> <li>Add new fields to a database</li> <li>Create new layouts</li> <li>Create a new database file</li> </ul>	<ul> <li>Define relationships between fields and files</li> <li>Use calculations</li> <li>Use summary and subsummary type fields</li> <li>Set up and use mail merge</li> </ul>



Spreadsheet Software Skills	<ul> <li>Open an Excel workbook</li> <li>Enter and edit data in a pre-existing workbook</li> <li>Save the workbook</li> <li>Print a prepared report</li> </ul>	<ul> <li>Insert, modify and delete rows and columns</li> <li>Create or modify the layout</li> <li>Create a range</li> <li>Enter a formula</li> <li>Sort data</li> <li>Create a new worksheet</li> <li>Create a chart</li> </ul>	Modify chart layout     Import and export information     Import and export data
Presentation Software	<ul> <li>Open a PowerPoint file</li> <li>Create a new presentation in both slide and outline format</li> <li>Present a prepared document</li> </ul>	<ul> <li>Format a presentation using a template</li> <li>Use transitions and builds</li> <li>Print handouts</li> </ul>	<ul> <li>Create user notes</li> <li>Add graphics, charts and multimedia</li> </ul>

### Internet Skills

Internet Skins			
Web Skills	<ul> <li>Launch Netscape</li> <li>Use hyperlinks</li> <li>Find a specific web site by typing in the URL</li> <li>Use basic search engine skills to find information</li> <li>Use bookmarks</li> </ul>	Download files from the Internet	<ul> <li>Use advanced search engine skills to find information</li> <li>Organize, import and export bookmarks</li> </ul>
Email Skills	Send and receive main     Open an attachment	Enter setting information Send attachments Utilize features like forward and reply Set up signature files	<ul> <li>Utilize address book and create distribution lists</li> <li>Create alternate mail folders and use filters</li> <li>Subscribe to and participate in listserv discussion groups</li> </ul>

### Miscellaneous Skills

Voice Mail Skills	<ul> <li>Retrieve messages</li> <li>Send messages</li> <li>Record a greeting</li> </ul>	<ul> <li>Record an extended absence greeting</li> <li>Use advanced features such as forwarding and group distribution lists</li> </ul>	
Audio-Visual Skills	Be able to operate the following:     VCR     Overhead projector     Photo copier	Be able to operate the following:     Classroom network hookups     Laserdisc player     CD player     Video projector     Fax machine     Connect a laptop computer to the video system	Be able to operate the following:     Equipment in the EPI center



# Individual Technology Learning Plan for Jane O. Trevian

Mentor Jerry T. Technology

This plan is intended to be complete between 7/1/99 and 6/30/00

The skills that are grayed out were identified as already being held during the self-assessment.

Classroom integration activities are suggestions.

### Operating System Skills

Operating System Skins	elli Skills					
	Beginning	Training Method	Intermediate	Training Method	Advanced	Training Method
General Computer	• Identify computer		<ul> <li>Back up files to the</li> </ul>		<ul> <li>Remove viruses</li> </ul>	Managing Virus
Skills	parts		server		from a floppy disk	Protection (Class 121)
	<ul> <li>Use and locate a</li> </ul>				and the hard drive	Taken <u>7/24/99</u>
	printer					Reviewed w/ mentor
	<ul> <li>Navigate and select</li> </ul>					<u>9/10/99</u>
	menu items					
Operating System	• Log on and navigate		<ul> <li>Begin a document</li> </ul>	Provided instruction	<ul> <li>Convert files</li> </ul>	Moving Between
Skiffs	both platforms		on one platform	sheets	between platforms	Platforms I & II
	• Learn to use either		and finish on the	Reviewed w/ mentor	and file types	(Classes 842 & 843)
	Mac OS8 or		other		<ul> <li>Learn how to use</li> </ul>	Taken
	Windows 95/98		N   Remaine files		both Mac OS8 and	Taken
	j			りつご	Windows 95/98	Reviewed w/ mentor
Computer			<ul> <li>Clear printer jams</li> </ul>	Printer Care and		
Troubleshooting	<ul> <li>Check electrical and</li> </ul>		<ul> <li>Check status of</li> </ul>	Feeding (Class 107)		
	peripheral		printer with the	Taken 7/29/99		
	connections		print monitor	Reviewed w/ mentor		
	<ul> <li>Check keyboard and</li> </ul>					
	mouse cables					
' i	• Conduct a "forced					
	quit"					
	<ul> <li>Restart the computer</li> </ul>					
	after a system crash					
	<ul> <li>Accurately report</li> </ul>					
	problems to the help					
	desk					

Integration Activities: Check for viruses and remove same from student disks, Rename student disks for dual platform use, Assist students with printer problems in labs

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### Electronic Portfolios

Nancy Becker
Instructional Technology Specialist

Bobbie Welch
Instructional Technology Specialist

Prince George's County Public Schools
June 27, 2000

#### THE GREAT CHOCOLATE EXPERIENCE V

Contact Person: Glenda S. Bequette < gbequett@accessus.net>

**Grades**: Open to all K - 12 classes (private, public and home schoolers)

**Description**: The focus of the Great Chocolate Experience V is "m&m® Math or m&m® Fractional Math. Schools from all over the United States & Canada will be divided into 6 geographical regions. Students will estimate "fun-size" bags of m&m®'s to determine packaging patterns with regard to number, color and region. Schools will have the opportunity to participate in optional activities including the submission of stories, poems, recipes, etc.

**Timeline**: Begins January 16, 2001 - March 23, 2001 (See calendar). The last day to sign up for participation is Friday, January 5, 2001.

#### **Objectives:**

- 1. Develop Math Skills (computation, predicting, counting, graphing, addition, subtraction, multiplication, division, percentages, fractions, grouping information, relationships, and comparing);
- 2. Understand Science Processes (gathering and recording data, interpreting data estimating, classifying, predicting and sorting);
- 3. Develop Technology Skills (communicating via e-mail, use spreadsheets, databases, send documents via e-mail, word-processing skills, etc.);
- 4. Integration of Language Arts, Reading, Writing, and Social Sciences; and
- 5. Correlation with the Illinois Learning Standards and ISTE's Technology Profile Performance Indicators.

**Participation**: Each class participating will receive a copy of the recipe book and newspaper/newsletter developed through this project as well as, a certificate of participation. In addition, a Web site will be developed to showcase the schools involved.

Registration: Complete the registration form online at

<a href="http://www.iceberg.org/~gbequett/gceparti.html">http://www.iceberg.org/~gbequett/gceparti.html</a> A teaching packet will be sent to you after you have registered. The online form will be available after November 1, 2000.

**Expectations**: Each registered school is asked to participate in m&m® Math or m&m® Fractional Math. Additional activities (art, reading, writing, social sciences, geography, etc.) will be provided as part of the project packet, however, they are optional.

#### Regions:

Region 1: Alaska, Hawaii, Washington, Oregon, California, Nevada, Utah, Montana, Idaho and Arizona (10 states).

Region 2: North Dakota, South Dakota, Wyoming, Colorado, New Mexico, Texas, Nebraska, Kansas, Oklahoma, and Arkansas (10 states).

The Great Chocolate Experience

Region 3: Illinois, Missouri, Iowa, Michigan, Wisconsin, Minnesota, Indiana, Ohio, Kentucky and Tennessee (10 states).

Region 4: Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Maryland, and Washington, D.C. (10 states & 1 district).

Region 5: Maine, Vermont, New York, New Jersey, Pennsylvania, New Hampshire, Rhode Island, Delaware, Connecticut, and Massachusetts (10 states).

Region 6: Canada

**WWW Page**: A WWW page is currently under construction. The address is: <a href="http://www.iceberg.org/~gbequett/gce5.html">http://www.iceberg.org/~gbequett/gce5.html</a>>.

#### Volunteers are needed for the following positions:

#### One (1) Chocolate Central Coordinator/Class. Requirements:

- 1. An Energetic Teacher & class with lots of spirit and a love of CHOCOLATE;
- 2. Able to send and receive numerous e-mails from the Regional & Hub Coordinators on a daily basis;
- 3. An extremely reliable e-mail account;
- 4. Able to coordinate with the Regional & Hub Coordinators and Glenda on a daily basis; and
- 5. Access to e-mail on a daily basis. (preferably in your classroom)

#### Six (6) Regional Coordinators are needed for each of the regions. Requirements:

- 1. Access to e-mail on a daily basis (preferably at school);
- 2. Able to send and receive numerous e-mails from your regional schools on a daily basis;
- 3. A reliable e-mail account; and
- 4. Able to coordinate with Chocolate Central & your regional schools.

#### Seven (7) Hub Coordinators are needed for each of the Hub regions within the State of Illinois. Requirements:

- 1. Access to e-mail on a daily basis (preferably at school);
- 2. Able to send and receive numerous e-mails from your hub schools on a daily basis;
- 3. A reliable e-mail account; and
- 4. Able to coordinate with Chocolate Central, the Regional Coordinator & your hub schools.

#### Two (2) Recipe Book Coordinators. A Coordinator will be needed for the K - 2 Recipe Book and one for the K - 12 Recipe Book. Requirements:

- 1. Able to receive large amount of e-mail;
- 2. A reliable e-mail account;
- 3. Access to e-mail on a daily basis (preferably at school);
- 4. Able to coordinate with all of the schools involved in the Great Chocolate Experience IV;
- 5. Access to a software program that creates a Recipe Book;
- 6. Send 1 copy (original) via U.S. Postal Service to Glenda for duplication & distribution by the



The Great Chocolate Experience

requested date; and

7. These Recipe Books should be designed and word processed by the students, not the teacher.

#### One (1) Newspaper/Newsletter Coordinator. Requirements:

- 1. Able to receive large amount of e-mail;
- 2. A reliable e-mail account;
- 3. Access to e-mail on a daily basis (preferably at school);
- 4. Able to coordinate with all of the schools involved in the Great Chocolate Experience IV;
- 5. Access to a software program that creates a Newspaper/Newsletter;
- 6. Send 1 copy (original) via U.S. Postal Service to Glenda for duplication and distribution by the requested date; and
- 7. This newspaper should be designed and word processed by the students, not the teacher.

#### Eight (8) Certificate Coordinators. Requirements:

- 1. Coordinate with Glenda to design and print participation certificates for the Great Chocolate Experience IV participants;
- 2. Access to e-mail on a daily basis (preferably at school);
- 3. Able to receive large amounts of e-mail;
- 4. A reliable e-mail account;
- 5. Access to a software program that creates certificates;
- 6. Send certificates via the U.S. Postal Service to Glenda for distribution by the requested date; and
- 7. These certificates should be designed and printed by the students, not the teacher.

If you are interested in any of these positions, please notify Glenda or check the appropriate box on the participation form.

			***
	.†	o Publish on the ternet	
**************************************			
	at this web address http:// that my last name will got be used with th	are and/or project to be published on the Internet I understand e published photograph, picture, and/or project will help custure my privacy.	
	Student's signature	Parent's Signature	
	Date signed	Dute signed  Presenter, Glaces Pequane	

#### **CHOCOLATE TEST**

- 1. How many Hershey's Kisses chocolates can be produced in a day?
- a. 12 million
- b. not enough
- c. 33 million
- 2. In what year were Hershey's Kisses chocolates first produced?
- a. 1921
- b. 1907
- c. before I was born
- 3. Which chocolate baking product can be included in fat-restricted diets?
- a. Hershey's cocoa
- b. Hershey's baking chocolate
- c. Hershey's chocolate chips
- 4. What was the first product advertised by Hershey Foods Corporation?
- a. Hershey's syrup
- b. Hershey's milk chocolate bar
- c. Mr. Goodbar chocolate bar
- 5. Approximately how many Hershey's Kisses chocolates are in a pound?
- a. 26
- b. don't know, but they taste great!
- c. 95
- 6. About how many cows are needed to provide enough milk for one day's production at the main plant in Hershey, Pa.?
- a. 50,000
- b. barnyard full
- c. 33,500
- 7. How many calories are there in a Hershey's Kisses chocolate?
- a. 25 calories
- b. none (little foods don't count)
- c. 50 calories
- 8. How many **Hershey's** chocolate chips are in a pound?

#### The Great Chocolate Experience

- a. about 1,000
- b. about 500
- c. about 376
- 9. At about what temperature does chocolate begin to melt?
- a. 78 degrees F
- b. sunny and 90 degrees F
- c. 95 degrees F
- 10. What is our best selling product?
- a. Reese's peanut butter cups
- b. Hershey's milk chocolate bar
- c. Hershey's Kisses chocolates
- 11. What do the street lights on Chocolate Avenue in Hershey, Pa., look like?
- a. Hershey's Kisses chocolates
- b. Reese's peanut butter cups
- c. lanterns
- 12. What words are spelled out in hedges in front of the main plant in Hershey, Pa.?
- a. Welcome to Hershey
- b. Hershey Cocoa
- c. Hope you enjoy your visit
- 13. How long does it take to make a Hershey's milk chocolate bar?
- a. about 17 days
- b. about 21 days
- c. about 10 days

Presenter: Glenda S. Bequette

#### HOCOLATE COVERED TRIVIA

- 1. Where can you go in the United States and smell chocolate all the time?
- a. Cocoa Beach, Florida
- b. Hershey, Pennsylvania
- c. Carmel, California
- 2. Can you guess how many chocolate bars the largest chocolate factory makes each year?
- a. over a million
- b. over a billion
- c. over a trillion
- 3. It takes almost one quart (about 1 liter) of milk to make a one-pound bar of milk chocolate -- true of false?
- 4. White chocolate has real chocolate in it -- true of false?
- 5. What does "M & M®" stand for?
- 6. How did Hershey's Kisses® get their name?
- a. Mr. Hershey's wife kissed him after she tried his tasty new candy.
- b. They were first made for Valentine's Day gifts.
- c. "Kiss" is an old name for any small piece of chocolate wrapped in foil.
- 7. If you eat lots chocolate, you'll get lots of:
- a. cavities
- b. pimples
- c. both cavities and pimples
- d. neither cavities nor pimples
- 8. What was the name of the famous character who had his own chocolate factory?
- a. Charlie Brown
- b. ET
- c. Willy Wonka
- d. Donald Duck
- 9. Would the world's tallest chocolate egg have fit inside your bedroom?
- a. sure--it was about the size of a watermelon
- b. probably--it was about 7 feet (2 meters) tall
- c. no way--unless you have an 18-foot (51/2 meters) ceiling.
- 10. Where do you think the first chocolate bunny was made?
- a. England



The Great Chocolate Experience

- b. Australia
- c. Pennsylvania
- d. Disney World
- 11. Which of these things do you think have been made out of chocolate?
- a. jigsaw puzzle
- b. chess set
- c. model of a computer diskette
- d. model of the Statue of Liberty
- e. all of these

#### **ANSWERS:**

- 1. (B) Chocolate fans go wild in Hershey, the famous home of the Hershey® Chocolate Company. The town smells of different kinds of chocolate each day, depending on what the factory is making.
- 2. (B) Over a billion chocolate bars are made each year at Hershey's factory.
- 3. TRUE
- 4. FALSE. White chocolate contains lots of cocoa butter, which comes from cacao beans. But it doesn't have the secret ingredient of all "true chocolate": chocolate liquor.
- 5. (B) M & M® candies may be munchy and mouthwatering, but they were named after their inventors, Forrest Mars and Bruce Murrie
- 6. (C)
- 7. (D) As far as scientist can tell, Pure chocolate does not cause pimples. And chocolate may protect your teeth against cavities. It's the sugar and other things added to chocolate candy that cause problems.
- 8. (C) Willy Wonka and the Chocolate Factory was a movie that was based on the book Charlie and the Chocolate Factory by Raold Dahl.
- 9. (C) The giant egg was 17 feet, 9 inches (about 5 1/2 m) tall and it weighed over 2 1/2 tons (2250 kg).

10 (D)

11. (E) All of those things and more have been out of chocolate by chocolate makers all over the world.

Presenter: Glenda S. Bequette

choctri.doc



Name:		
Date:		

#### m&m FRACTIONAL MATH

1. Do not open your bag. Estimate how many m&mO's are in your bag. \_\_\_\_\_ Graph and write your estimate of each color.

$$B = Blue$$

$$G = Green$$

$$O = Orange$$

$$Y = Yellow$$

$$R = Red$$

$$set \mathbf{B} = \underline{\hspace{1cm}}$$

2. Open your bag. Put your m&mÒ's into sets by color. Graph your actual count of each color.

3. Write the number of m&mO's in each set.

$$set \mathbf{B} = \underline{\hspace{1cm}}$$

$$set \mathbf{G} = \underline{\hspace{1cm}}$$

set 
$$\mathbf{R} = \underline{\phantom{a}}$$

$$set DB =$$

4. How many m&m's are in the bag? \_\_\_\_\_

5. How far off was your estimate?

6. Write the fraction for each color in your bag. The answer should be written with the lowest common denominator.

$$R =$$

7. Write the percentage of each color in your bag.

8. Using the percentage that you discovered in number 7, write the decimal equivalent.

9. Using > or < or =, show the relationship between these sets.

$$G \underline{\hspace{1cm}} R$$

10. Complete these problems.

The Great Chocolate Experience

$$B + DB = \underline{\hspace{1cm}}$$

$$O \times G = \underline{\hspace{1cm}}$$

$$R - O = ____$$

$$R + Y = \underline{\hspace{1cm}}$$

$$G \times B =$$

$$R \times G = \underline{\hspace{1cm}}$$

$$DB \times R = \underline{\hspace{1cm}}$$

Make up 4 problems (+, -, or x) of your own.

- 11. On a separate sheet of paper, draw a circle graph that illustrates the percentage of m&mÒ's in your bag.
- 12. Are all bags of m&m's the same? Find out!! Compare graphs with four (4) other students.
- 13. m&m's have between \_\_\_\_\_and \_\_\_\_candies in a bag.
- 14. My least common color is \_\_\_\_\_.
- 15. My most common color is \_\_\_\_\_.
- 16. My class's least common color is \_\_\_\_\_.
- 17. My class's most common color is \_\_\_\_\_.
- 18. Be sure to title your graph in the space provided.
- 19. Congratulations you've succeeded in helping determine packaging patterns for m&m's. So enjoy -- eat them, save them or take them home.

Presenter: Glenda S. Bequette

**WORK AREA:** 

#### **CHOCOLATE FUN FACTS**

On average, each American ate 11.5 pounds of chocolate in 1995. That's over 3 billion pounds total.

The retail chocolate industry in the U.S. is worth \$13 billion per year.

Valentine's Day still means Chocolate. Americans spend \$665 million each Valentine's Day on candy, making it the fourth biggest holiday of the year for confectionery purchases (after Halloween, Christmas and Easter).

American men say they'd rather receive chocolate than flowers on Valentine's Day, especially those over the age of 50. Sixty-eight percent of men age 50 or older say they'd prefer receiving chocolate over flowers from their sweetheart on Valentine's Day, while just 22% said they'd rather have the flowers.

The first "chocolate box" was introduced by Richard Cadbury in 1868, when he decorated a candy box with a painting of his young daughter holding a kitten in her arms. Cadbury also invented the first Valentine's Day candy box. \*

Chocolate manufacturers use 40% of the world's almonds, 20% of the world's peanuts and 8% of the world's sugar. Members of the Chocolate Manufacturers Association use about 3.5 million pounds of the whole milk each day to make milk chocolate. \*

\* from Chocolate Fads, Folklore and Fantasies, Linda K. Fuller, Ph.D., 1994

#### History of U.S. Per Capita Consumption Chocolate

	Pounds per	
	person	
1983	9.67	
1984	10.0	
1985	10.1	
1986	10.1	
1987	10.2	
1988	10.4	
1989	11.2	
1990	11.5	
1991	10.6	
1992	10.6	
1993	10.9	
1994	10.8	

#### Davis, Anne

"Blooming" Critical Thinkers

Bloom's Taxonomy Blue Ribbon Display

Bloom's Taxonomy Question Teaching Resources for Knowledge

Bloom's Taxonomy Question Teaching Resources for Comprehension

Bloom's Taxonomy Question Teaching Resources for Application

Bloom's Taxonomy Question Teaching Resources for Analysis

Bloom's Taxonomy Question Teaching Resources for Synthesis

Bloom's Taxonomy Question Teaching Resources for Evaluation

Current Events URLs

Original Author Submissions

#### Dede, Chris

Using Immersive Virtual Worlds in Real World Classrooms (pdf format)

#### Ditson, Mary

How to Create WEB PAGES with Inspiration (pdf format)

Brainstorming with an AlphaSmart (pdf format)

Textbook Notetaking with an AlphaSmart (pdf format)

Textbook Notetaking with an AlphaSmart (cont) (pdf format)

Making Your Inspiration Outlines TALK (pdf format)

Letting the Computer do the TYPING (pdf format)

Structured Writing Templates help students meet Writing Standards (pdf format)

Literary webs help students meet Language Arts Standards (pdf format)

Concept Maps help students meet Science Standards (pdf format)

Concept Maps help students meet Social Science Standards (pdf format)

#### Donohue, Pat

Linking Learning to Life: Model, Tools and Strategies Linking Electronic and Real

Communities

**Original Author Submissions** 

#### Drake, Kris

**DLS Network News** 

Original Author Submissions

#### Evans, John

NASA's Education Program

Original Author Submissions

#### Fitzgerald, Sara



NECC 2000 Sessions Handouts Index D-H

Putting TCO to Work

**Original Author Submissions** 

#### Garton, Juli

Web Based Staff Development

#### Glotzbach, Joe

<u>Trails Project Cyberneers: Integrating Technology with History Original Author Submissions</u>

#### Greenwood, Karen

Thin Client @ School: Thin-Client Solutions for K-12 Schools (pdf format)
Thin Client @ School: Enriching Education through Affordable Technology
Original Author Submissions

#### Griswold, Debbie

Integrating Technology into the Language Arts Curriculum

<u>Listserv / Mailing Lists</u>

Works Cited

**Original Author Submissions** 

#### Guhlin, Miguel

Creating Web Based Lessons: WebQuests & Other Internet Projects

Creating Web Based Lessons: WebQuests & Other Internet Projects - Cover Page

Getting Graphics & Text

Creating a Web Page with FrontPage Express

Original Author Submissions

#### Gutterman, Liz

<u>Laptops Even the Score for Urban Learners</u> Original Author Submissions

#### Hallstrom, Barbara

Children and Search Engines: What's the Big Deal?

**Original Author Submissions** 

#### Hawkins, Joyce

<u>Musical Crossroads: The Rhythm of Technology Handouts</u>
<u>Lesson Plan for Standards-Based Technology-Integrated Instruction (pdf format)</u>
Original Author Submissions



NECC 2000 Sessions Handouts Index D-H

#### Hayes, Jeanne

K-12 Education Technology Update

Original Author Submissions

#### Hirsch, Jim

HyperInternet: Interactive Internet Activities (pdf format)

#### Horan, Mike

<u>SeaTrek: Implementation of Telementors in Middle-School Science</u> <u>Original Author Submissions</u>

#### Houser, Mike

Computer! Heal Thyself!
Original Author Submissions

#### Howell, Tricia

GCPS Technology Assessment Model

Teaching and Learning - Definition and Scoring Rubric

Gwinnett County Technology Needs Assessment Survey

Technology Assessment Model Implementation Plan Template

Original Author Submissions

#### Hunt, Adrianne

Research, Replication, Results: INtegrating TECHnology from Georgia to Louisiana

Classrooms

A Professional Development Model for Integrating Technology in the Student-Centered

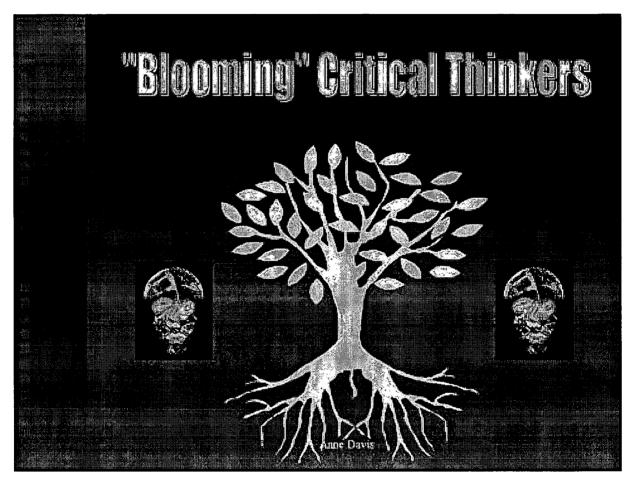
Classroom

Technology-Connected Lesson Plan

Original Author Submissions







# Bloom's Taxonomy Blue Ribbon Display

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
recall	review	use	order	arrange	select
remember	explain	apply	group	organize	recommend
match	discuss	practice	categorize	plan	rate
define	summarize	construct	examine	predict	rank
describe	paraphrase	interpret	inspect	produce	critique criticize
list	illustrate	dramatize	infer	design	evaluate
name	compare	show	analyze	develop	conclude
state	locate	demonstrate	contrast	invent	judge
tell	identify	give an example	detect	create	decide

**Knowledge** - You can recall or record information, concepts, and ideas in the approximate form that they were learned.

Comprehension - You can grasp and interpret prior learning.

Application - You can transfer information to a life problem or new task.

Analysis - You can examine, take apart, classify, predict, and draw conclusions.

**Synthesis** - You can originate, combine and integrate prior knowledge into a product, plan or new proposal.

Evaluation - You can appraise, assess or criticize on the basis of specific standards or criteria.



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Bloom's Taxonomy Question Teaching Resources for Knowledge		
Knowledge	Describe John Glenn's liftoff into space on October 29, 1998.	
Knowledge	Can you recall the youngest gold medallist in the Winter Olympics?	
Knowledge	List the people you admire the most. (Jimmy Carter, Oprah Winfrey, Bill Cosby, Mother Teresa, Madeleine Albright, Ghandi, Michael Jordan, Princess Diana)	
Knowledge	Tell about the plight of the sea otter.	
Knowledge	Do you remember the name of Germany's president?	
Knowledge	State the crash location of SwissAir Flight 111.	
Knowledge	Name the Secretary-General of the United Nations.	
Knowledge	Define the British Monarchy.	
Knowledge	Match these countries and currencies. (France-franc, Mexico-peso, Great Britain-pound, Japan-yen, Italy-lira, United States-dollar, Russia-ruble)	

Bloom's Taxonomy Question Teaching Resources for Comprehension			
Comprehension	Summarize the issues facing Benjamin Netanyahu and Yasser Arafat as they participate in the Middle East Peace Talks.		
Comprehension	rehension Discuss the advantages of Bilingual Education.		
Comprehension	Comprehension Compare inflation to deflation.		
Comprehension	Identify the bacteria responsible for the contamination of hamburger meat in recent news.		
Comprehension	Illustrate the new Furby.		
Comprehension	Review the capture and release of the three American POW" in Kosovo.		
Comprehension	Comprehension Locate Iraq on a world map.		
Comprehension	Explain the reasons for Pope John Paul's visit to Cuba.		
Comprehension	Paraphrase President Clinton's State of the Union Address.		

Bloom's Taxonomy Question Teaching Resources for Application		
Application	Show how a balanced budget affects our nation.	
Application	Demonstrate the African capoeira dance, now popular in Brazil.	
Application	Put into practice a water conservation plan in your own household.	
Application	Using the Congressional ruling for the salmon fishermen, tell why the sea lion population has tripled on the West Coast.	
Application	<b>Apply</b> your knowledge of the Middle East Peace Talks, the Iraq Standoff, and the current crisis in Kosovo, and tell how the politics of one country can affect the entire world.	
Application	Using your knowledge about Bill Gate's Microsoft empire, <b>dramatize</b> a make-believe community of businesses and consumers.	
Application	Construct a replica of the Oklahoma tornado damage.	
Application	Give examples of how the Clintons do things together.	
Application	Interpret the significance of Yeltsin's firing of his political cabinet.	

Bloom's Taxonomy Question Teaching Resources for Analysis		
Analysis	Appraise the significance of President Clinton's trip to Africa.	
Analysis	Examine Eric Rudolph's disappearance.	
Analysis	Group the countries that are pro and con about the current conditions in Iraq.	
Analysis	Criticize the use of in-depth television during military warfare.	
Analysis	Analyze the similarities between the Holocaust and the current crisis in Kosovo.	
Analysis	Investigate the toxicity level of seabirds living off the Great Lakes in the U.S.	
Analysis	Place in order a timeline of events depicting the collapse of Russia's economy.	
Analysis	What can you <b>detect</b> about the Inca's way of life from the mummified children recently found by archaeologists?	
Analysis	Research the long-simmering tensions between Serbian authorities and independence-seeking ethnic Albanians in Kosovo.	

	Bloom's Taxonomy Question Teaching Resources for Synthesis		
Synthesis	International Women's Day has recently been introduced as a holiday. <b>Predict</b> a new holiday that will be created 20 years from now.		
Synthesis	<b>Develop</b> a disaster plan for citizens to follow regarding the weird weather from El Nino.		
Synthesis	Due to storms from El Nino, create an evacuation plan for people living near water.		
Synthesis	Arrange in chronological order the flight path of the two hot air balloonists' trip around the world.		
Synthesis	Design a wheeled apparatus for students to use, replacing heavy backpacks.		
Synthesis	Organize a volunteer group to participate in Jimmy Carters' "Habitat for Humanity""organization.		
Synthesis	<b>Produce</b> a planned agenda for your community to temporarily shelter ethnic-Albanian refugees.		
Synthesis	With the millennium fast approaching, <b>prepare a presentation</b> about how the Y2K problems might impact society if they are not addressed by the year 2000.		
Synthesis	<b>Develop</b> a list of resources for parents to use on counseling teenage behavior.		

Bloom's Taxonomy Question Teaching Resources for Evaluation		
Evaluation	Judge the merits of the Northern Ireland Peace Talks.	
Evaluation	Critique the role of television in shaping people's opinions.	
Evaluation	Draw a conclusion about Maya Quest's effect on modern civilization.	
Evaluation	Rate the importance of homework to the achievement of academic success.	
Evaluation	Recommend constraints against industry to diminish global warming.	
Evaluation	Select from the list of potential presidential candidates the individual you believe most capable of leading our country into the 21st century.	
Evaluation	How does Mark McGwire rank among other baseball greats?	
Evaluation	<b>Decide</b> how much impact Bill Clinton's impeachment will have on how history records his presidency.	
Evaluation	<b>Evaluate</b> certain ways our American society has desensitized its young people to violence.	

# Current Events URLs

CNN Newsroom	1.44-1/1-2
	http://learning.turner.com/newsroom/index.html
Time for Kids	http://www.timeforkids.com/TFK/index.html
Scholastic News Online	http://teacher.scholastic.com/newszone/index.asp
Currents Events Theme Page	http://www.cln.org/themes/current.html
Weekly Reader (links to News Busters Game)	http://www.weeklyreader.com/features/ce.html
NewsCurrents Online	http://www.newscurrents.com/
CBC for Kids	http://www.cbc4kids.ca/regular/homepage.html
Pencil News	http://www.msnbc.com/local/pencilnews/default.asp
Twenty-five Great Ideas for Teaching Current Events!	http://www.education-world.com/a_lesson/lesson072.shtml
NewsMaker Profiles	http://www.cnn.com/resources/newsmakers/world/namerica/castro.html
Information Please: Facts Behind the News	http://kids.infoplease.com/main/newsfacts.html
Daryl Cagle's Professional Cartoonist Teacher's Guide	http://www.cagle.com/teacher/

Art Today pictures used per license Link to their site at http://www.arttoday.com

#### "Blooming" Critical Thinkers for Tomorrow











#### **Using Immersive Virtual Worlds in Real World Classrooms**

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CDede@gmu.edu
http://www.virtual.gmu.edu

Within the next decade, via the videogame industry, "virtual reality" devices capable of multisensory immersion will be ubiquitous in rich and poor homes, urban and rural areas. To compete with the captivating, but mindless types of entertainment that will draw on this power, educators will need beautiful, fantastic, intriguing environments for learning. Our work is beginning to chart these frontiers, as well as revealing which of virtual reality's (VR) promising features for learning are useful, which are not. To engage in effective strategic planning, all educators need to understand the opportunities and challenges of "on the horizon" technologies such as VR.

Project ScienceSpace is a collection of virtual worlds we have designed to explore the potential utility of physical immersion and multisensory perception to enhance science education. Funded by the National Science Foundation over the past six years, ScienceSpace now consists of two worlds: NewtonWorld (for elementary students learning Newtonian dynamics and mechanics) and, MaxwellWorld (for secondary students learning electrostatics as an example of vector fields). We have conducted extensive laboratory research that demonstrates virtual reality has significant benefits for helping a broad range of students learn complex conceptual material. Research publications, Quicktime VR files, Quicktime movies, and images from our worlds can be downloaded from our website: <a href="http://www.virtual.gmu.edu">http://www.virtual.gmu.edu</a>

Practical advice for educators at every level about preparing for VR is important, because this technology is perhaps three years away in terms of desktop affordability and seven years away from being "under the Christmas tree" in videogames. Exploring the potential of home-based devices for learning is particularly important because of the high costs of keeping school-based instructional media current with technologies routine in business settings. The goal espoused by many today of multimedia-capable, Internet-connected classroom computers for every two to three pupils carries a staggering price tag—especially if those devices are obsolete five to seven years after installation.



While providing adequate, sophisticated school-based instructional technologies is extremely important, it is vital to leverage this investment via simultaneous utilization of entertainment and information-services devices in family and community settings. Using technology to aid educational reform through systemic innovation must occur on two levels simultaneously: drawing one boundary of the system around the school, with student-teacher-technology partnerships; and another system boundary around the society, with classroom-family-workplace-community-technology partnerships. Such an innovation strategy necessitates developing learning materials—including "edutainment"—for emerging technologies such as virtual reality that can empower learning both in and out of school.

In Spring, 2000, we placed VR systems into five public school classrooms to explore the strengths and limits of this emerging technology in real educational settings. We are developing findings about the integration of VR devices in real world classrooms. Issues include links to curricular science standards, student performance on conventional assessments, issues with simulator sickness, the durability of high-end VR devices, and special accommodations teachers must make. We are also studying the differences between how elementary and secondary pupils respond and are deriving the implications of our research for instructional design. Our website contains publications about this work. We appreciate any feedback you care to provide -- thanks!



# How to Create WEB PAGES with Inspiration®

Easy as pie!

#### I. Create the content.

Keep in mind that each of the "topics" (I, II, III, etc.) will be a separate page.

Put all of the words for each page as NOTES under the topics. (If you add subtopics, these will appear on the web pages, but they won't BE separate web pages.)

#### II. Convert to HTML.

In Inspiration®

- A. Choose File: Export...
- B. In the Export... dialog box, choose
  - 1. Outline Formats: HTML Multiple Web Pages
  - 2. Export Options: One Page Per Topic
  - 3. Click OK

#### a. A dialog box will cue you to:

- (1) Place it
- (2) Name it

Note: Inspiration® then automatically creates separate, linked html documents for each of the topics you created!

#### III. See how it will look.

Here are the steps:

- A. Open Netscape Navigator® (or other web browser)
- B. Choose File: Open

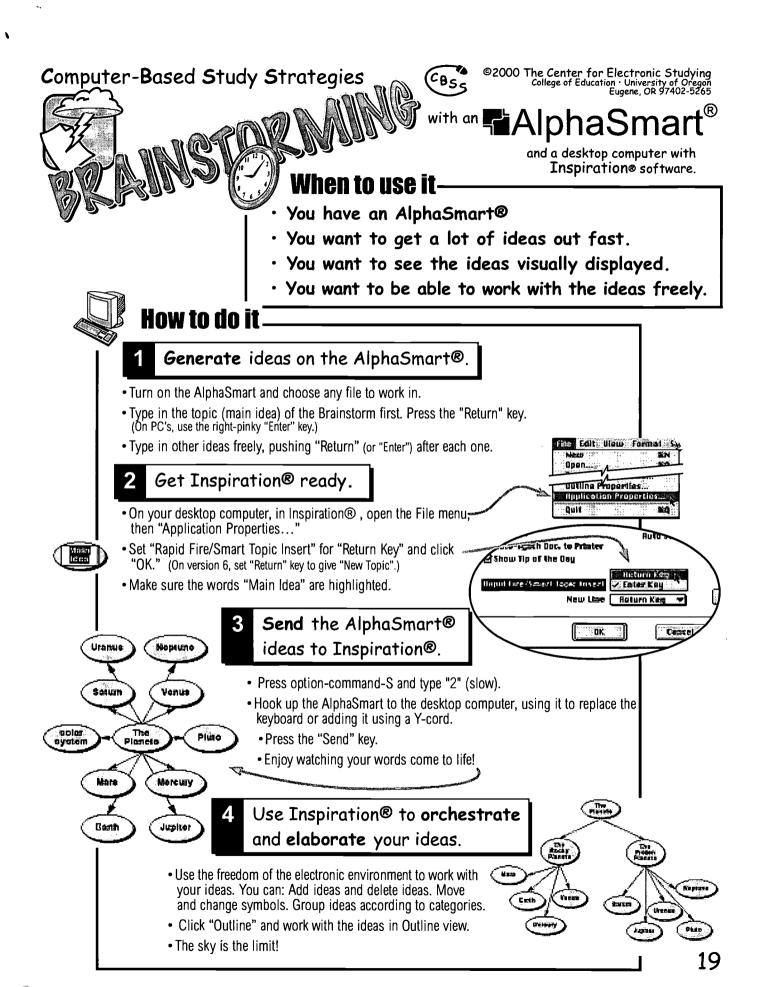
Navigate to find the home page (by whatever name you just gave it).

#### C. Voila!

You will be able to click on the links to get to the other pages, and each has a "Home" button.



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Computer-Based Study Strategies



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with an

and a desktop computer with Inspiration® software.

#### When to use it

- You have an AlphaSmart®.
- You want to learn from what you read.
- · You want to be able to study your notes effectively.

#### How to do it-

#### Type headings on the AlphaSmart®, one per file.

- Turn on the AlphaSmart and open File 1.
- Type in the first heading IN CAPS. Press the "Return" key. (On PC's, use the right-pinky "Enter" key.)
- Open File 2. Type in the second heading IN CAPS.
- Proceed through the rest of the headings.
- In the last file, type in the word VOCABULARY.

#### Fill in the details on the AlphaSmart®.

- Go back to File 1. Read the material under the first heading.
- Translate the first idea into a few key words, and type them in. Press the "Return" (or "Enter") key.
- Add another few words, push "Return" (or "Enter").
- Continue until you have put in all the important ideas under the first heading.
- Emphasis "big" ideas, e.g. capitalizing them. Mark "small" ideas, e.g. by putting dashes before them.
- Go to File 2 and repeat this process, then File 3, and so on.

### Add Vocabulary on the AlphaSmart®.

As you fill in the details (or afterwards), use your VOCABULARY file as a place to type in words you want to learn. Underneath each word, type the definition.

Edit Diem Format S Doen vulling Properties Application Properties Duit

#### Get Inspiration® ready.

• On your desktop computer, in Inspiration® , open the File menu, then "Application Properties..."

 Set "Rapid Fire/Smart Topic Insert" for "Return Key" and click "OK." (On version 6, set "Return" key to give "New Topic".)

-sgath Doc. to Printes Show Tip of the Dey Hatura Ken j

(Continued on next page...)



with an

#### **₽**AlphaSmart

Inspiration software

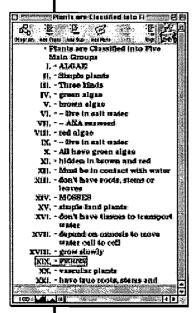
(...continued from previous page)

- Instead of "Main Idea," type in the name of the article/chapter.
- •Push return for a new line; it will have the prefix "I."



#### Get the AlphaSmart® ready.

- •Important!! Press option-command-S to adjust the speed, and press 2 (or 1).
- Open File 1.
- •Hook up the AlphaSmart to the desktop computer, using it to replace the keyboard or adding it using a Y-cord.



#### Send the notes to Inspiration®.

- Press the "Send" key.
- Enjoy watching your notes appear! This is a good way to absorb the material.
- Press the "Return" key (on either machine) to start a new line.
- Push option-command File 2 (F2) to open File 2. Press the "Send" key to add this material to the outling
- Continue through all the files.
- Use Inspiration® to manipulate (learn) the material.

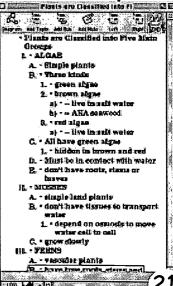
Go through the list and turn it into a real

outline.

- •Select a line and delete or move it (to indent, or move to the right, just push Tab).
- •Add lines of information as you wish.
- •The more you manipulate the material, the better you will

Hint: In the vocabulary section, move all the definitions to the right, under their words. This way you can use "Hide/Show Subtopics" (in Toolbar

/-oub", or by double clicking to the left of the line) to quiz yourself on the words!





# Making Your Inspiration® Outlines TALK

Students are more motivated to write when they can make the computer SAY what they have written. For some students, being able to HEAR their notes or study outlines will make learning much easier.

#### I. Choose a program.

- A. All Macintosh computers are equipped with "Simple Text."
- B. Use Don Johnston's WRITE: OUTLOUD
- C. Recent versions of Microsoft Word have the ability to "speak."

#### II. Using Simple Text

- A. Select and copy your outline (if the information is in a map, click "Outline" first).
- B. Open Simple Text
- C. Paste
- D. Highlight all (command-A)
- E. Choose Sound: Speak All (command-H)

Note: You may want to go to Sound: Voices and choose a voice. Voice preference is individual.

#### III. Using WRITE: OUTLOUD

- A. In Inspiration
  - Select your entire outline (command-A)
  - 2. Copy
- B. In a word processing program (e.g. Word)
  - 1. Open a new document
  - 2. Paste
  - 3. Replace carriage returns as follows:
    - a. Choose Edit:Replace (command-H)
    - b. Replace ^p with .^p
  - 4. Select entire document
  - 5. Copy
- C. In WRITE: OUTLOUD
  - 1. Open new document
  - 2. Paste
  - 3. Unselect "Highlight Word by Word"
    - a. Use "Read Sentences" and/or "Read Paragraphs"
  - 4. Set up with desired voice and speed

Princess at 180 wpm works well

5. Set pointer so that clicking allows you to hear next sentence, and next, and next.

Note: You may want to work with the "pronunciation" feature.



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# Letting the Computer do the TYPING

Technology is making it easier and easier for students to express themselves, even if typing and spelling are difficult!

- I. Choose a program.
  - A. Use Don Johnston's CO:WRITER for Word Prediction
  - B. Consider voice recognition software
    - 1. Dragon Dictates' Naturally Speaking
      - a. Use "preferred"
      - b. Works best with Pentium III processors
    - 2. Try other voice recognition programs

### II. Using CO: WRITER

- A. Launch CO:WRITER First!
- B. Then, open Inspiration
- c. To bring CO:WRITER to the front, use the "wake up key" +=
- D. Customize CO: WRITER
  - 1. Select number of words to suggest
  - 2. Format as desired
  - 3. Use "CO:WRITER Help" in Apple Menu to answer questions.

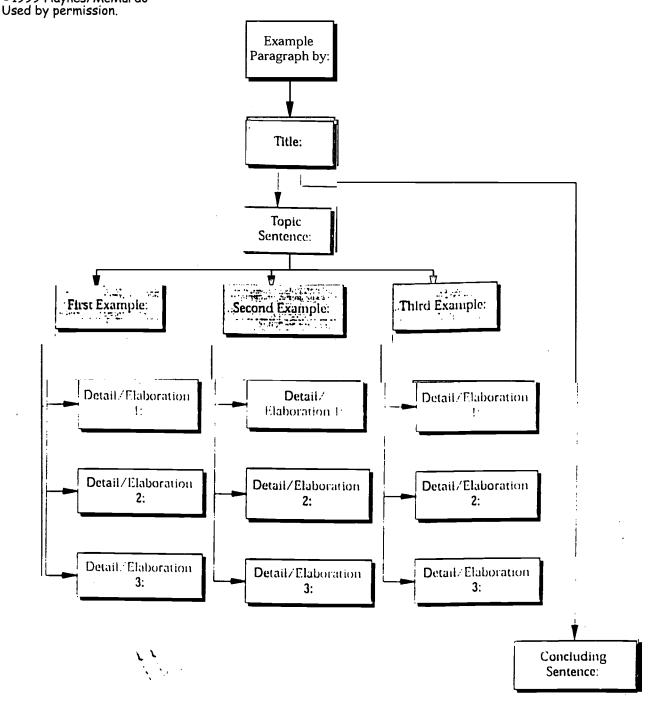


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# Structured Writing Templates help students meet Writing Standards

from: Structured Writing Process by Chuck Haynes and Kathleen McMurdo @1999 Haynes/McMurdo





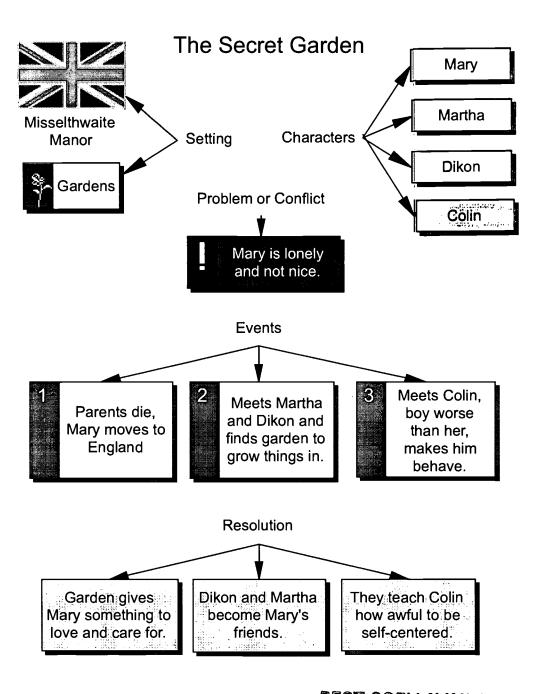
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## Computer-Based Study Strategies (CBSS



#### Literary webs help students meet Language Arts Standards

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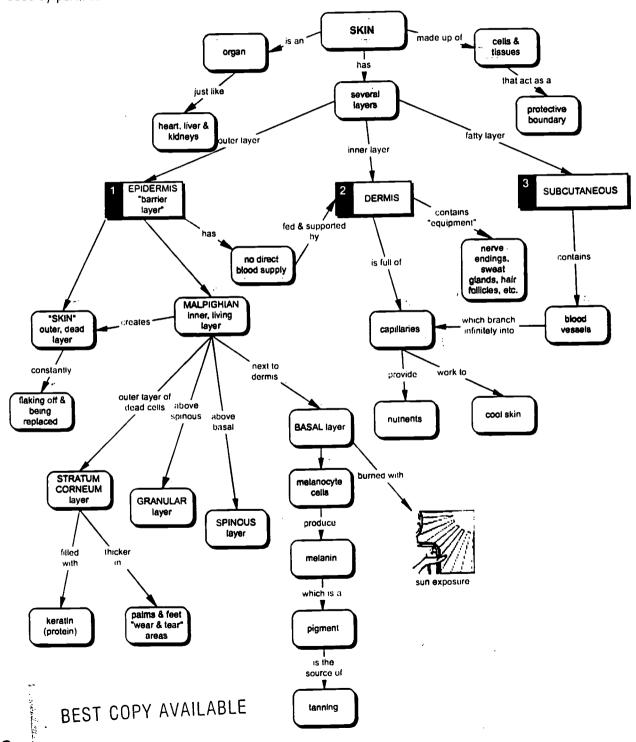




### Computer-Based Study Strategies

# Concept Maps help students meet Science Standards

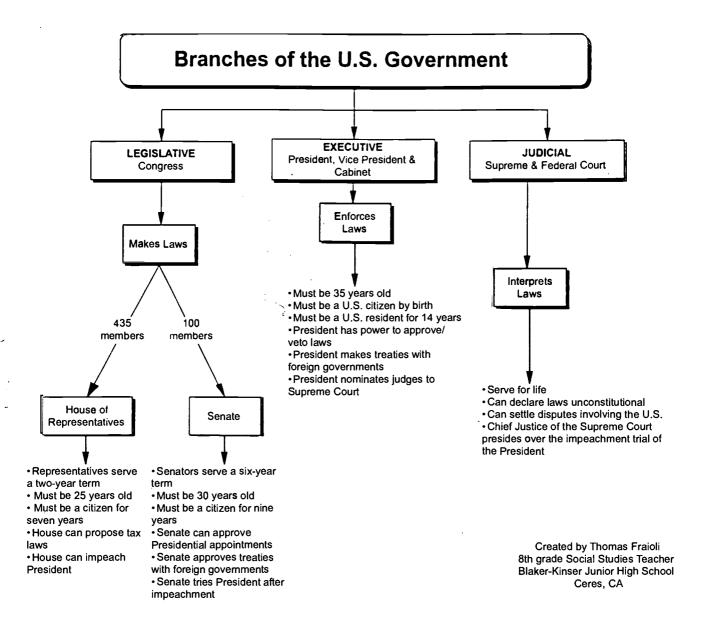
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#### Concept Maps help students meet Social Science Standards

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# Linking Learning to Life: Model, Tools and Strategies Linking Electronic and Real Communities

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<u>Dakota Skies</u>. Observe your world from the viewpoint of the moon and accept, if you dare, the Moon's Challenge -- to describe exactly where you live using the language of space -- astronomy.











Memories & Storics

Robot Lab

Wounded Hawk Ranger Rosie

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http://www.natureshift.org

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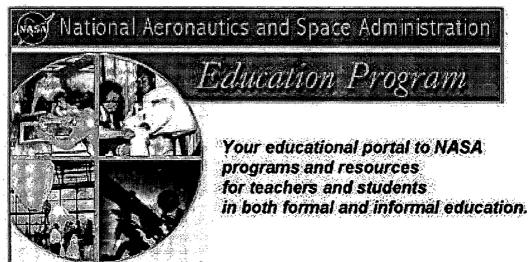








# NASA's Education Program <a href="http://education.nasa.gov/">http://education.nasa.gov/</a>



NECC Ame 26, 2000

John L. Exanc - MASA Langley Research Center

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#### Jancich, Helen

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Technology Management Audits: A New Service to School Districts
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Classroom Campfires: Don't Do Internet! Do Integrate! (pdf format)

<u>Prairies, Pioneers, & Partnerships: Matching Standards, Resources, and Engaging Projects</u> (pdf format)

**Original Author Submissions** 

#### Laverty, Pamela

Online Interactive Lessons: Tools & Training
Original Author Submissions

#### Lindaas, Steve

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Nature Shift! Linking Learning to Life - Explainer Hints (pdf format)

Nature Shift! Linking Learning to Life - Simple Motor Directions (pdf format)

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# **Beyond Standards**

What We Are Learning From Conducting TechAudits
NECC – June 27, 2000

Helen S. Jancich Howard D. Mehlinger

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### **Technology Management Audits**

A New Service to School Districts

Helen Siukola Jancich and Howard Mehlinger

#### What Is a Technology Management Audit?

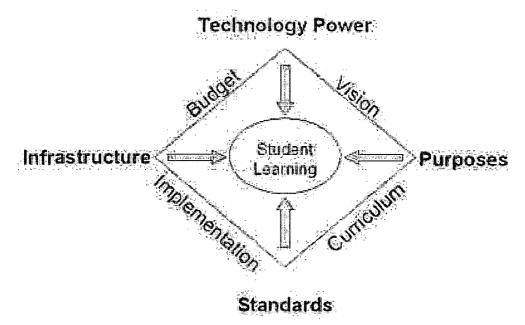
Technology Management Audits (TMA) are intended to assess all aspects of technology use in a school district. A TMA, conducted by an expert team of outside auditors, is a district-level examination of the alignment of educational purposes, technological power, infrastructure, and standards. The audit team reviews documents and survey results and makes on-site visits to conduct interviews and visit schools in order to answer specific technology-related questions. Auditors are responsible for creating and presenting the final audit report and the accompanying recommendations. Audit results can be used to guide future technology efforts in the school district.

#### Why Do a Technology Management Audit?

School systems have invested a great deal of money and resources in technology. Public officials, business leaders, and parents have high expectations for technology's impact on schooling. Also, technology changes rapidly, making existing plans obsolete. Yet, in most districts there are few individuals who have a comprehensive view of how technology is used. Furthermore, some technology-related problems are difficult to solve without external help. Outside auditors can help because they have no investment in past decisions or future actions, they bring a broad perspective to bear, they are able to gather information swiftly, and they are dispassionate in their analysis of that information.

#### What Questions Are Addressed in a Technology Management Audit?

Technology Management Audits are comprehensive by their nature and focus ultimately on student learning. Technology is viewed as part of a dynamic school system in which each element affects the others. In an audit it is therefore necessary to pay attention to all the elements of the system. An audit typically analyzes technology use on four levels:



**Purposes**: What is your district striving to accomplish with technology? Is technology being used for such purposes as learning, teaching, management, communications, curriculum enhancement? How well does the technology you have chosen fit that mission? **Powers of Technology**: Do all decision makers, teachers, and other staff members understand the power of technology in education? Do they understand the capacity of technology to compute, analyze, store, show, and recall information; to alter the use of time; and to inspire and empower the user? How well are those powers being harnessed in your district?

Infrastructure: Does the structure and operation of your school district enable you to realize the maximum benefit from technology? How well are personnel, equipment and networks, software, technical support, and information resources being utilized?

Standards: What role do standards - such as ISTE Standards for Students and Teachers, CEO Forum STaR Charts, and applicable state standards - play in planning? Is there an alignment between these standards and what actually occurs in the schools?

A Technology Management Audit will also concentrate time and attention on specific issues that are worrisome to you. For example, you may be concerned about whether your district has good technology policies, or adequate personnel to manage technology, or a system for coping with rapid obsolescence, or a productive approach to staff development, or a public that doesn't understand what technology means to school districts. Perhaps you are anticipating a future technology planning effort, a bond issue for technology, or a campaign of grant-writing, and you want to challenge your staff to think beyond and outside of its present experience.

#### Who Does a Technology Management Audit?

The TMA team includes a lead auditor who serves as the point of contact with your district, plans the audit with you, assembles and leads the team, and prepares and delivers the final report. The team also includes at least three other auditors, depending on the size of the district. These auditors, who provide a fresh perspective on your situation, have extensive experience with technology and education, including both K-12 schools and college and university settings. They are former teachers, technology

coordinators, superintendents, and other administrators, as well as experts in software and network design, evaluation, teacher education, and technology funding. None of these people has a vested interest in the past or future of what your district does. The audit team might also include interns.

#### What Is Involved in Doing a Technology Management Audit?

The process begins with a meeting (on-site and/or by phone) with a lead auditor who will review with you the rationale for an audit, the details of the process, and logistical issues related to the on-site visit. The lead auditor will also want to know what important issues lie behind your need for a TMA. From such a conversation will come a detailed plan for an audit.

Next, you will be asked to gather reports and documents about the use of technology in your district and to administer a districtwide survey to teachers and students. Surveys should be conducted at least two weeks - and preferably four weeks - prior to the audit team's visit. The survey is developed and the results are analyzed by the Survey Research Center at Indiana University. The survey results are interpreted by TMA staff before the on-site visit.

A five-day on-site visit by the audit team follows. The auditors review the documents and reports collected, visit classrooms and technology labs, and conduct interviews with staff and faculty. You will want the audit team to visit during a week when visitors will least disrupt your district and when they will see your district in normal operation. Also, you should choose a week when all key personnel can be present during the first few days of the audit. Having more than one possible week in mind will facilitate scheduling.

After data are collected and analyzed, the lead auditor writes a draft report, shares it with the district for feedback, revises the report based on that feedback, and presents the final report to the district. The report consists of an executive summary, observations, recommendations, and appendices containing survey results, among other materials. Pictures, taken on-site, are used to illustrate key points.

#### What Do We Need to Do to Prepare for an Audit?

Once your district has accepted a TMA proposal, the lead auditor will ask you to collect reports and documents related to technology use in your district. You will also be asked to administer a survey to a sample of faculty and students. Finally, you will be asked to identify faculty and staff to be interviewed during the site visit and arrange for their interviews.

A Technology Management Audit is a serious investment of your district's time and effort. It will be of most use if all goes smoothly. Typically, a school system will designate a senior official - perhaps a technology director, curriculum director, or business official - to be the liaison to the audit team.

#### **How Long Does It Take to Complete an Audit?**

An audit is normally completed in about two months - from initial contact to the delivery of the final report. The five-day, on-site visit can be scheduled as soon as the audit proposal is accepted by the district. Drafts and final versions of written reports are completed not more than one month after the site visit.

#### **How Much Does an Audit Cost?**

Technology Management Audits are customized to meet the needs of the individual client. The exact cost



Beyond Standards: What We Are Learning from Conducting TechAudits

will depend upon the size of the school district, which affects the amount of time needed to analyze data and the number of auditors required to conduct the audit. Thus an audit for a typical school district consisting of eight elementary schools, three middle schools, one high school, and 10,000 students would cost in the range of \$40,000 to \$45,000. The price of an audit covers personnel expenses, travel, equipment, survey analysis costs, and the cost of producing the final report.

Districts can pay for audits from many sources. Consider not only school district budgets but also grants you have received; approach local foundations or businesses that have an interest in your school district; tap into state monies available for planning or evaluation.

#### Want to Learn More?

For more information, contact:

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800/766-1156 or 812/339-1156, ext. 2500 FAX: 812/339-0018

E-mail: cpds@pdkintl.org

# ONLINE LEARNING FOR TEACHERS AND STUDENTS NECC '00, Atlanta, GA

#### **Agenda**

#### I. Introductions and Overview (20 min)

#### II. Web-Based Curriculum

- . Overview and Purpose of Web-Based Curriculum (20 min)
- B. Group Investigation Activity: Use of Primary Resources, Online Expeditions, and Online Collaborative Projects (50 min)
- C. Online Tool Demonstrations (30 min)
- D. Hands-On Curriculum Development (60 min)

#### Lunch (60 min)

#### III. Online Professional Development

- . Overview of Online Professional Development (30 min)
- B. Group Activity: Designing Curriculum for the Online Environment (30 min)
- C. Group Investigation: Threaded Discussion Tools and Techniques (30 min)
- D. Strategies for Online Facilitation (30 min)
- E. Examples of Online Professional Development Workshops (60 min)

#### Kirsten Johnson, Barbara Treacy, Susie Metrick

Center for Online Professional Education Education Development Center, Inc., (EDC) Newton, Massachusetts

Ó2000, EDC

#### Online Learning for Teachers and Students, NECC '00

Kirsten Johnson, Barbara Treacy, Susie Metrick Education Development Center, Inc. (EDC)

#### Designing, Implementing, and Assessing Online Courses

When you are designing, implementing, and assessing an online course, you follow similar principles and procedures as you would if you were working on a face-to-face course. This handout walks through the main steps in this process, highlighting recommendations specific to the online medium.

We have organized our recommendations into five broad categories-audience, topic, curriculum, facilitation strategy, and assessment. These categories are strongly inter-related, and must be considered in relation to each other. For example, when you plan your workshop, you will do well to think simultaneously about the audience and the topic they wish to investigate. We encourage you to also consider each category separately; such an exercise teases apart each strand of your thinking and clarifies your choices.

Finally, our recommendations pertain specifically to the type of online course with which we are experienced-a course in which interesting materials or investigations provide a starting place for professional participants to exchange views and strategies. While the course curriculum and facilitator scaffold and guide the learning experience, in our courses the learners are teachers (and vice versa), and their discussions provide the primary learning arena. This type of course is patterned after a graduate seminar format, rather than a lecture course or self-paced tutorial.

#### Guiding Questions

- 1) Who is your audience?
- 2) What is your topic?
- 3) What is your curriculum?
- 4) What is your facilitation strategy?
- 5) What is your assessment strategy?
- 1) Recommendations for defining and understanding an audience
  - There should be some special benefit to your audience in taking the course online rather than face-to-face, due to time and/or distance constraints.
  - Explicitly specify a common set of desired outcomes. Clarity about common outcomes is even more important in the online medium than in face-to-face situations.

- The detail with which you define your audience is very important online. This detail informs your topic selection, curriculum design, and instructional strategies, and helps ensure that they satisfy your participants' expectations well enough to counterbalance the gaps of distance and time across which you will work. For example, you will want to know:
  - . What are your audience's goals? By "goals" we mean desired outcomes that they've stated explicitly. For example, a good definition of an audience goal might be "to learn how to use web-based resources in the middle-school classroom."
  - b. What are your audience's needs? By "needs", we mean unstated requirements. For example, the audience will need to learn how to be comfortable using the web.
  - c. What are their competencies and learning styles?
  - d. What is their access to the technology they will need for your course, and how comfortable are they with it?
  - e. How much time do they have available?
  - f. What is their timeline? At what point during the school year will they need the information? At what point do you expect that they will be able to take the course?

#### 2) Recommendations for defining a topic

- Assuming your goal is to take advantage of connecting people for discussion, (rather than simply to deliver rote content), then a successful topic will profit by reflection, exploration, brainstorming, and sharing.
- The web is a "cool" medium, so a "hot" or provocative topic will be most successful at engaging the audience to participate actively.
- The topic is amenable to a lag in response time. Pacing in an online course is slower than in face-to-face situations.
- The topic can be broken into specific outcomes that can be achieved in a limited amount of time.
- Define your topic in detail in order to make sure it will suit your audience, and also to inform your curriculum design, and instructional and assessment strategies.

  For example, you will want to know:
  - . What outcomes are you trying to achieve?
  - b. To achieve these outcomes, what components (subject matter, tasks) do you need to cover?
  - c. For each task, what is your objective, and how will you know you are successful?

#### Checkpoint Question

When you compare your audience's desired outcomes with what you want to teach, is there something for everyone?

#### 3) Recommendations for developing your curriculum

Keep in mind that the web medium shapes content in specific ways. What works in other formats may not work well on the web.



- Due to the cool medium of the web, design assignments to actively engage participants. For example, fuel discussions by framing provocative questions, drawing on case examples, using collaborative activities, engaging in explorations, and encouraging sharing of ideas.
- Frame assignments in small, clear chunks.
- Include "we are all together" moments to segue from one chunk to the next. (Strategies for doing this are discussed under facilitation strategies.)
- Frame sessions so that they can survive and even benefit from a lag in response time; accommodate the fact that participants work at their own paces, and will be at different parts of the assignments during the same time period.
- Take advantage of web-based tools and resources.
- Make sure activities are technically feasible for your audience, and provide necessary technical support.
- Abide by guidelines of good web design and navigation. The goal is to provide a seamless and intuitive learning environment, where participants will not feel inhibited or hampered by the medium.

#### 4) Recommended facilitation strategies

Online course facilitators, like classroom teachers, play a variety of roles. In the online medium, it is possible to divide the roles among several people. Whether or not there will be one or more people responsible for the online course, it is helpful to consider all of the various roles and strategies that go into successful online facilitation.

Facilitator Roles	Strategies
Greeter, encourager. Make everyone feel heard. Create a comfortable environment.	<ul> <li>Publicly respond to each person's messages in the beginning of the course.</li> <li>After everyone is comfortable, responses can become more global.</li> </ul>
	<ul> <li>Show your personality, so people feel like they know you.</li> </ul>
	<ul> <li>Respond to initial introductions using them as a springboard for discussion.</li> </ul>
	<ul> <li>Use bios, photos, introductions, emoticons (gestures represented via text), and an informal and friendly tone.</li> </ul>

Foster communication between and among the participants.	<ul> <li>Phrase responses to encourage further responses from participants, and draw connections between participants' comments.</li> <li>Avoid "over-facilitating", i.e., don't answer every question and settle every point so there is nothing for anyone else to say. If you respond to one question, push the discussion forward by raising another.</li> </ul>
Provide behind-the-scenes support via email.	Email is a good way to respond to individual problems, or to prod people into participating without embarrassing them. If participants start saying interesting content-related comments via email, encourage them to post it to the discussion as well.
Model accepted interactions for participants.	<ul> <li>Pay attention to the tone of messages that you post, as a way of setting the workshop tone globally.</li> <li>Being inclusive and making connections between participants' comments will model this type of discussion for the participants as well.</li> </ul>
Keep the workshop alive; prevent stagnancy.	<ul> <li>Post "acknowledgement" messages to participants' comments, even if you don't have anything fancy to contribute on that point.</li> <li>Be aware of time-participants don't check the discussions as frequently as we do. Don't let the lulls last too long though. If you keep the discussion alive, this is an incentive for participants to check more frequently.</li> <li>The facilitator, or at least one member of a team of facilitators, must read and contribute to the discussion every other day (minimum).</li> <li>Keep the majority of all communication in the public forum. Do not dilute the discussions with too much one-on-one email with participants.</li> </ul>

Keep the discussions on track. Rein in long digressions. Push people forward on the topic.	<ul> <li>Act as a parabola, reflecting the energy back towards a central focal point.</li> <li>Be creative with limited tools for getting people's attention. Use subtle/humorous messages, or perhaps a humorous graphic/photo. Send personal email if necessary.</li> </ul>
Guide participants through the curriculum.	<ul> <li>Provide "we are all together" moments, such as:</li> <li>collaborative, consensus-building activities</li> <li>discussion summaries</li> <li>email messages that provide closure and thanks for previous session, and introduce and provide encouragement for next assignment</li> <li>surveys</li> <li>synchronous sessions</li> </ul>
Make sure the audience and the curriculum are in sync.	<ul> <li>Observe participants' behavior and responses to assignments, and adjust facilitation strategies and/or curriculum content and presentation as necessary.</li> <li>Encourage participants to explicitly reflect on the course experience and provide feedback (either in the online discussions or via email to the facilitator).</li> </ul>

#### 5) Recommended assessment strategies

- To measure whether you have reached your stated goals, it is useful to survey your participants with the same questions both pre- and post-workshop. You can use web-based survey forms to collect this information.
- Ask questions that can inform your future designs.
- Do follow-up inquiries to look for changes in behavior, attitude, usage, and practice. Email is a convenient method for doing this from a distance.
- Consider doing a detailed analysis of the stored messages that remain available after the course. (For example, you can look at quantitative data such as the number of messages posted by individuals, frequency of participation, and number of levels of responses within particular conversations. You can also look at qualitative information, such as the nature of the discussions, what common themes emerged, how participants related to each other and to the course content, etc.)
- In the last week of the course, invite participants to post messages reflecting on their experiences in the course and what they have learned, and to discuss what they plan to do next.

#### Click to open author's original document.

#### Online Learning for Teachers and Students, NECC '00

Kirsten Johnson, Barbara Treacy, Susie Metrick Education Development Center, Inc. (EDC)

#### References

#### **Articles about Online Learning**

Green, L. (1998). Online Conferencing: Lessons Learned. Human Resources Development Canada: Office of Learning Technologies.

Harasim, L, Hiltz, S., Teles, L. and Turoff, M. (1997). Learning Networks: A Field Guide to Teaching and Learning Online. Cambridge, MA: MIT Press.

Henri, F. (1992). Computer conferencing and content analysis. In A.R. Kaye (Ed.), Collaborative Learning Through Computer Conferencing: The Najaden Papers. New York, NY: Stringer-Verlag, 116-136.

Kleiman, G. (1998). Online Workshops for Education Leaders. Education Development Center (EDC) Center for Online Professional Education. Available on the Web at: <a href="http://www.edc.org/LNT/news.Issue7/feature2.htm">http://www.edc.org/LNT/news.Issue7/feature2.htm</a>

Mason, R. (1992). Methodologies for evaluating applications of computer conferencing. In A.R. Kaye (Ed.), Collaborative Learning Through Computer Conferencing: The Najaden Papers, New York, NY: Stringer-Verlag, 105-115.

Renyi, J. (1996). Teachers Take Charge of Their Learning: Transforming Professional Development for Student Success. National Foundation for the Improvement of Education. Available on the Web at: <a href="http://www.nfie.org/exec.htm">http://www.nfie.org/exec.htm</a>

Sparks, D. and Hirsh, S. (1997). A New Vision for Staff Development. Alexandria, VA: Association for Supervision and Curriculum Development.

Tinker, B. and Haavind, S. (1996). Netcourses and Netseminars: Current Practice and New Designs. The Concord Consortium. Available on the Web at: <a href="http://www.concord.org/pubs/pdf/netcours.pdf">http://www.concord.org/pubs/pdf/netcours.pdf</a>

Zorfass, J., Remz, A., and Ethier, D. (1998). Illustrating the Potential of an Online Workshop Through a Case Example. CMC Magazine. Available on the Web at: <a href="http://www.december.com/cmc/mag/1998/feb/zorfas.html">http://www.december.com/cmc/mag/1998/feb/zorfas.html</a>

#### Archives of Leadership and the New Technologies (LNT) Online Workshops

The Leadership and the New Technologies (LNT) project, run by Education Development Center, Inc., has led several online workshops for education leaders on topics concerning the integration of technology into K-12 education. To view the archives of some of the LNT workshops, go to <a href="http://www.edc.org/LNT/workshop.htm">http://www.edc.org/LNT/workshop.htm</a>



42eXplore: An Approach to Internet Integration

http://eduscapes.com

Annette Lamb

Larry Johnson

alamb@eduscapes.com ljohnson@mail.escapees.com



Foundation of Info

Sturdy chairs need 3 legs.

You need 3 good resources for a foundation of information.

42eXplore: You need four to explore!

Project Overview

Goal:

encourage life-long learning

support classroom teachers

Target Age: everyone

interest, popular k12, requests Topics:

Postings: each Monday

Contents

Easy & Harder Description

4 Starters

**Activities** 

Additional Web Resources

Word List and Links

Indexes: Subject, Date

http://eduscapes.com

http://memory.loc.gov/ammem/fsowhome.html

http://www.plainfield.k12.in.us/hschool/webq/webq1/

webquest.htm

http://lcweb2.loc.gov/wpaintro/wpahome.html

http://www.pbs.org/wgbh/amex/dustbowl/

http://www.escape.com/~paulg53/politics/

great depression.shtml

http://newdeal.feri.org/

http://www.museum.siu.edu/museum/

Museum\_Explorers/school\_pages/bourbonnais/

index.htm

http://www.education-world.com/a\_lesson/

lesson147.shtml

http://www.cccalumni.org/history1.html

Locate Websites

Search Tools for children, for adults

http://www.rcls.org/ksearch.htm

http://www.rcls.org/search.htm

Select Materials

Choose based on:

Content Quality

Readability

Varied info channels Multiple Perspectives

http://eduscapes.com/42explore/smplmac.htm

http://sln.fi.edu/qa97/spotlight3/spotlight3.html

http://www.science-tech.nmstc.ca/

engine.cfm?function=link&idx=1394&language=english#simple

http://www.galaxy.net:80/~k12/machines/

gears1.shtml

Organize Resources

Starting Points and Link Sites

References and Information

Learning Tools & Activities: WebQuests

By Kids, for Kids

By Teachers, for Teachers

http://eduscapes.com/42explore/poetry.htm

http://www.poetry4kids.com/links.html

http://www.gigglepoetry.com/

http://www.bordentown.k12.nj.us/mjs/Mr.%20O/

pwebq.html

http://www.link.cs.cmu.edu/dougb/rhyme-doc.html

http://7vsweekly.freeservers.com/

http://www.geocities.com/EnchantedForest/5165/

index1.html

http://www.iron.k12.ut.us/schools/cms/resource/

Welco.htm

**Build Activities** 

Start with outcomes

Then, build:

questions

applications

webquest

project guides

http://eduscapes.com/42explore/teslatn.htm http://www.WorldOfEscher.com/gallery/

http://penn.phm.k12.in.us/Math-Science/New\_Folder/

final.html

http://forum.swarthmore.edu/sum95/suzanne/

tess.intro.html

http://www.best.com/~ejad/java/patterns/

patterns\_j.shtml

http://library.thinkquest.org/16661/index2.html

Set the Stage

Guide learning: worksheets, diagrams

Transform information: write, draw, discuss

Share ideas: email, bulletin boards

Things to avoid - Don't...

copy URLs by hand expect miracles

give too many options waste time surfing

Things to do

Review the 42eXplore archives

Check 42eXplore weekly

Keep it simple Focus on specific pages

Match activities & outcomes



Click to open author's original document.

#### **Bridging the Digital Divide**

Learn how technology and telecommunications are used to meet the needs of diverse learners in remote locations. Hawaii's E-School has leveraged the playing field to provide equity and excellence to students anytime from anywhere by developing virtual credit standards-based courses for teachers and students. The presenters will share their successes and challenges in offering educational opportunities to students in rural settings.

#### **Abstract**

Learn how technology and telecommunications are used to meet the needs of diverse learners in remote locations. Hawaii's E-School has leveraged the technology infrastructure, recycled computers, developed online staff development and online high school courses to provide equity and excellence to students anytime from anywhere. This presentation will focus on the key ingredients in developing virtual credit standards-based courses for teachers and students. The presenters will share their successes and challenges in offering educational opportunities to students in rural settings.

The Hawaii Department of Education (HDOE) Electronic School (E-School) is a virtual school that offers high school credit courses to students through the use of multimedia technologies and the Internet. E-School breaks down the walls of the traditional classrooms and makes quality instruction available to students at more convenient times and more accessible places - "any place, any time, for everyone!"

In 1996, Hawaii's public schools received a \$4.7 million competitive grant for a five-year U.S. Department of Education Technology Innovative Challenge Grant to expand and enhance E-School. The major partners and contributors are Maui High Performance Computing Center (MHPCC) and Tech Corps Hawaii. Since its inception in 1996, E-School has developed 33 online courses.

The state-of-the-art HDOE telecommunication and technology infrastructure provide a technology perspective of the value of the infrastructure to the development and success of on-line courses. E-School includes both courses for students and a teacher education and in-service teacher training program.

E-School extends the traditional school schedule and expands awareness by including experiences from the community and the world. The project accomplishes these changes based upon these goals:

- Promote challenging standards that assist statewide systemic reforms.
- Develop curricula and teaching strategies exportable to other settings and communities.
- Benefit students by integrating acquired technologies into curriculum to enhance teaching, training and student achievement.
- Offer intensive professional development for teachers and staff on use of technology in all learning environments.
- Develop new learning environments for disadvantaged and technologically undeserved students.
- Create high-quality educational technology applications and services that can be marketed to other communities.

Collaboration with businesses have expanded the dimensions of E-School offerings. E-School is a successful model that has created multiple partnerships



The School of the 21st Century

throughout the wider community. Over 50 corporations and educational programs have pledged their support in building this virtual school. This support ranges from extended connectivity to schools, teacher training, and mentoring students to technical expertise in the areas of multimedia development.

E-School students come from varying geographic and economic backgrounds. Educationally disadvantaged students and technology underserved students have new educational opportunities. Using the interactive curricula, students have the ability to share their expertise and to explore in the learning process together, both locally and globally. Teachers facilitate the learning process and guide learners down pathways, working in a self-paced collaborative process.

Through the use of lecture/demonstration, participants will learn how Hawaii has drawn from various resouces in offering high school credit courses to all students throughout Hawaii. They will take away ideas of a successful electronic, virtual model.

#### Urls:

Advanced Technology Research: atr.k12.hi.us

E-School: www.eschool.k12.hi.us

Magnet E-Academy: e-academy.k12.hi.us

Technology & Telecommunications for Teachers: <a href="www.k12.hi.us/~tethree">www.k12.hi.us/~tethree</a>
Technology Literacy Challenge Fund Summer Institute: <a href="www.k12.hi.us/~tlcf">www.k12.hi.us/~tlcf</a>

#### Presenters:

Vicki Kajioka is an Educational Specialist with the Hawaii Department of Education. She is the Director of E-School, Hawaii's Electronic School, which provides on-line and web-based courses for secondary school students and staff development for teachers. Vicki is also a member of the TechCorps Hawaii Board of Directors.

Donna Min Shiroma is a Resource Teacher with the Hawaii Department of Education, Advanced Technology Research. She coordinates the Technology Literacy Challenge Fund Summer Institute Workshops for teachers and is an instructor in the Technology and Telecommunications for Teachers program sponsored by the HI DOE.

# Improving Teaching and Learning Through Technology at the Campus Level

This NECC workshop is being offered as a preview of a one-day workshop offered by the Consortium for School Networking (CoSN) to assist building-level decisionmakers strengthen educational technology programs and planning. The actual training products and session, to be offered beginning in the Fall of 2000, and titled *New and Emerging Competencies for Building-Level Technology Champions*, was developed by CoSN, with support from BellSouth Foundation. Workshops will be presented to building-level technology decisionmakers and teams-principals, media specialists, campus technology coordinators, and others involved in campus-level planning for effective use of technology.

#### Focus, training objectives, and workshop deliverables:

Increasingly, accountability for technology purchasing, planning, and assessment is a major responsibility of school building-level administrators. District administrators, school boards, and communities have an investment, and therefore an interest, in technology utilization at individual campuses. While these district administrators focus on certain issues and functions that impact all campuses, there remains a significant role and responsibility that individual schools have for technology planning.

The primary objectives of the workshop are to help building-level technology decisionmakers and teams:

- to consider critical issues
- to locate resource information regarding technology use
- to develop new strategies for promoting effective use of technology in their school's classrooms

The components of the workshop include:

- Day-long training session
  - morning presentation on the following topics: Linking Technology to Educational Goals Budgeting: Taking Total Cost of Ownership (TCO) to the Classroom Successful Models: How the E-rate Is Being Used As a Catalyst for Technology Planning Measuring Success: How Will We Know When We Get There?
  - afternoon small group roundtable discussions
- Participant Workbook
  - narrative overview of each topic
  - copies of trainer's PowerPoint presentation slides
  - URL Resource List for each topic
  - additional resources

#### Overview of the key discussion topics to be addressed in the workshop:

Linking Technology to Educational Goals



Across our districts and campuses, in a myriad of settings and conditions, we can cite instances of how technology is changing teaching and learning-just as it is changing homes and businesses in our community and beyond. Many educators believe in the benefits of technology, but education has been somewhat remiss in gathering data needed to validate and improve on technology-based programs as well as in changing the culture of the school campus and classroom. The good news: there is a growing body of research studies now pointing to the effectiveness of technology use in schools.

Technology is helping teachers design effective learning activities that are more student-centered. Educators sometimes refer to this as moving from being a "sage on the stage" to a "guide on the side". As a "guide on the side", the teacher can combine more traditional teacher-centered activities with student-centered ones that allow for more active and engaged learning opportunities.

At the forefront of our minds must be a continuous emphasis on ensuring that the benefits of technology are within the reach of all of students and teachers. This requires thoughtful planning and policy in states and districts-and on individual campuses.

Discussion will address:

- student achievement
- educational equity
- workforce preparedness
- challenges for schools to address

Budgeting: Taking Total Cost of Ownership (TCO) to the Classroom

In what some might now call the "good old days", schools purchased computer equipment with a variety of funding sources, including not only district budgets, but also PTO money, bake sales, and cashed in soup labels-your school may still be using some of these strategies! Sometimes equipment was donated by community businesses or parents, though it was rarely state-of-the-art, latest-and-greatest technology.

It was the job of a technology coordinator (or more likely someone with technology responsibility, often in addition to teaching or other duties) to refurbish, repair, cannibalize and do whatever necessary to get the machines into service and keep them working.

After some number of years of this practice, schools began to acknowledge that this resulted in chaos, with a jumbled array of hardware, no standards for software, compatibility problems, and more.

Unfortunately, as schools juggle with existing budgets while trying to grow technology plans, this practice continues on some campuses.

A legendary figure in educational technology, LeRoy Finkel, wrote an article some years ago titled, "When Schools Cannot Afford to Accept Contributions of Computer Equipment". His main point was that when the resources required to maintain equipment donations were significantly out of proportion to the instructional benefits of using them, then the gift should not be accepted.



While this may not seem so astounding today, at the time it was a conceptual breakthrough for schools, many of whom were so hungry for computer technology that they would take anything offered to them. Finkel's article was surely a forerunner of the concept of Total Cost of Ownership (TCO) of technology in schools.

#### Discussion will address:

- what total cost of ownership means
- costs beyond the purchase of hardware
- determining where your campus is with TCO-and where it should be

Successful Models: How the E-rate Is Being Used As a Catalyst for Technology Planning

The Universal Service Fund (USF) for schools and libraries, or as we have come to more commonly know it-the E-rate-is a federal initiative that provides significant discounts on telecommunications and Internet technologies to K-12 schools and public libraries in the U.S. The E-rate discount program was authorized by Congress as part of the Telecommunications Act of 1996 and signed into law in February, 1996. The law left the details of the program to the Federal Communications Commission (FCC), which inaugurated the program in May, 1997.

Funded at up to \$2.25 billion annually, the program provides discounts on telecommunication services, Internet access and internal connections for eligible schools and libraries in the United States. The Schools and Libraries Division (SLD) of the Universal Service Administrative Company (USAC) is responsible for administering the E-rate program through an application process.

Some would tell stories over the two-year history of the program of struggling through the application process, working feverishly to meet deadlines, and being frustrated by delays. But when all is said and done, the E-rate program is making a difference in the availability of technology to many of this nation's children. To date, thousands of schools and libraries from every state in the nation have participated in and benefited from the E-rate program.

Schools have always been eager to adopt technology, but prior to the E-rate many lacked funding to do so. The E-rate program is serving many schools and libraries across the nation and is benefiting entire communities by reaching remote and rural schools, large urban schools who lack resources, and small private schools.

Not only has the E-rate program changed many communities, but it is strongly supported by an overwhelming majority of Americans-a finding of a poll commissioned by members of the Education and Library Networks Coalition (EdLiNC).

On the other hand, getting a school wired is only the starting point-*not* the finish line. Once the hardware, wiring, and basic infrastructure are in place to allow for access, the *real* work begins: training, documenting progress, communicating results, and adapting plans as needed to meet ever-changing goals and needs.

#### Discussion will address:

success stories from schools where use of E-rate funds is making a difference



• creating a broad plan and making your dollars count

Measuring Success: How Will We Know When We Get There?

In her adventures in Wonderland, Alice asked the Cheshire cat, "Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where...," said Alice.

"Then it doesn't matter which way you go," said the Cat.

And so it is with technology effectiveness on our campuses. If we don't have a plan in mind, it is difficult to know when we are making progress. And with today's significant focus on and monies invested in educational technology in our schools, it is no longer sufficient to be accountable only for the installation of hardware and connectivity. Educators and communities are asking, "And so...?"

Discussion will address:

- what we should be assessing
- planning for success
- research and evaluation findings to support evaluation of your plan
- what teachers should be accountable for-and how administrators should support them
- things to remember as you assess progress

Additional information about the CoSN workshop, *New and Emerging Competencies for Building-Level Technology Champions*, as well as a schedule for future workshops may be found by pointing your browser to the CoSN website at <a href="http://www.cosn.org">http://www.cosn.org</a> (click on the Conferences and Workshops button) or by calling Toni Miller at 202-466-6296, x15.

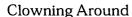
Ringmasters, Clowns, & Tightropes:

Educational Technology

Management and Leadership

**Annette Lamb** 

alamb@eduscapes.com http://eduscapes.com



We've got answers to the big questions! Correct, Incorrect, Silly

#### 1 Learning

Do computers really make a difference in kids' learning?

Yes, no, maybe... It depends what we want children to learn!

#### Communicating

Word processor, Graphics, Email, Chat Phone, Speaking/Audio, Movement/Video http://quest.arc.nasa.gov/women/intro.htm Ask not what computers can do with children, but what children can do with computers. http://teleeducation.nb.ca/nosignificantdifference/ Impact-NCET

Flexibility to meet individual needs Reduce the risk of failure at school Present relevant information Motivate and stimulate learning Enhance special needs learning Encourage thinking & collaboration Promote "fresh" teaching

#### Impact - ACOT

Enthusiasm & Collaboration
Graduation Rate Increases
Higher Ed Entry Increases
Writing Increases
Reduced Absentee Rates
Basic Skill Learn Time Reduced

Information Literacy Increases <a href="http://fromnowon.org/">http://fromnowon.org/</a>

Impact: What are you measuring? Effectiveness, Efficiency, Appeal

Believers Unite

Why are you a believer?
Test scores, Anecdotes, Smiles
How can you show nonbelievers?
2 Integration

What do you mean by the term "integration of the computer into the curriculum"?

It's the opposite of segregation.

Technology is a tool and resource that should be used as the learning need dictates.

#### Integration

Ongoing Use, Regular Use, Project Use Teachable Moment Technology is transparent and interwoven like the voice, pencil, and books.

#### Inspiration

http://forum.swarthmore.edu/students/ http://www.digitaldog.com/

#### 3 The Numbers

How many computers are enough?

You need enough computers so that each student can access the technology, when it is needed.

http://parkscanada.pch.gc.ca/parks/main\_e.htm
4 Expiration Dates
How do you handle aging technology in your schools?

Develop a plan for retirement.

Retire in phases.

If it's green, it's biology

If it stinks, it's chemistry

If it has numbers, it's math

If it doesn't work, it's technology

**Planning Options** 

Living Technology Plan

Cross Your Fingers & Prayer

#### **Big Infusions**

Big Chunk Local/Area/Gov't

Huge Grant

Pros: Get lots of stuff

Cons: When will you get it again?

Doesn't lead to evolution

#### Chunks of Tech

Pro: What you need, when you need it

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Cons: When we get a grant, funding...

We'll give it to squeaky wheels...

Requires a good tech plan

Hand-Me Downs

Buy constantly and shift equipment around

Pros: Repurposing adds life

Cons: Quiet people lose

Repurpose equipment until it fades away

over time.

#### 5 Assessment

How do you assess the IT program within your school?

What are your goals?

How well are you reaching your goals?

Look at your program from

multiple perspectives

It said "Insert disk #3" but only two disks will fit in the little hole.

Press any key. Where's the any key?

Windows installation complete, press your

luck to continue.

Wow!Look at the cool cup holder

on my computer!

What's important?

Are students getting to the technology when

they need it?

Are teachers using the technology

when it could be used?

Are parents/community members

happy with the results?

**Assessment Tools** 

Standards, Testing, Portfolios, Interviews,

Surveys & Polls, Documentation, Data

Assessment Keys

Be specific, Focus on a particular topic

Keep it short, Try it before use

Ask yourself:

Why am I collecting this data?

How will I use this data?

Make it work

Require it faculty meetings,

get tech, do paperwork

Enjoy it interesting, food, rewards

6 Future - Trends

What coming trends should technology leaders

be aware of?

Faster, cheaper, cooler, easier

Equity, access, copyright issues

Watch kids, television, mag, and techies

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The future is that time when you'll wish

you'd done what you aren't doing now.

Anything is possible if you don't know what you are talking about.

The true test of intelligence is not how much we know how to do, but how we behave when we don't know what to do.

John Holt, How Children Fail

Visual Communication

Video conferencing, Imaging, Animation,

Digital video

http://www.gsn.org/cu/index.html

**Authentic Projects** 

Communicating, Writing, Imaging

Real-world, data, experiences impact

http://www.ibiscom.com/

Collaborative Projects: Teachers, Students

Get person shares, contributes, assesses

http://ftp2.vc.attjens.co.jp/vc\_66/

index2countdown.html

#### 7 Implementation

How do you get other teachers on staff to commit to integrating technology into their class-room activities?

Gifts, bribes, jealousy, threats OR

Collaboration, sharing, support

There are two types of computer users:

Those that back up their files and those that will one day be upset that they didn't.

Provide Choices Do A Do B Do C

There is no "none of the above".

**Build Teams** 

Burn the fire from both ends

Groups of 3, Teachers & Students

Administator & Teacher

Lend Support

I'll post the projects, you get them to me

I'll make the page, you send me URLs

You take the pictures, I'll download them

Drag Them Along

Baby steps

Repeated projects

Think small

Every expert was once a beginner!

8 Culture

How do you build the technology culture in your school?

Keep it simple Make it fun

Make it a part of the day



Work as a team Smile!

We believe that children are the future

We believe teachers shape their future...

We believe technology is cool

We believe teachers are cooler.

-Tom Snyder Productions

Start with Cool Projects

Low "learn-time"

Very little time

Very little management

High impact

Real-world

Make the curriculum fun!

http://www.clark.net/pub/cve/cveteeth.html

Share Cool Projects

Reach Outside the Classroom

Classroom or hall bulletin boards

Library/lunchroom sharing

School-wide activities

Work across grades

Share on the web!

http://members.aol.com/il2teach/pubpage.htm

Involve Everyone! Involve

students in grant writing

teachers in creating

principals in judging

parents in sharing

**Build Fun Themes** 

Schoolwide projects

Logo contests

Fund raising activities

Lab/classroom fun:

Beanie toppers, screen borders,

mouse pads, mobiles

9 Motivation

How do you motivate teachers?

Positive work environment

Moral and technical support

Praise

**Opportunities** 

Early retirement incentives

The mediocre teacher tells

The good teacher explains

The superior teacher demonstrates

The great teacher inspires

William Arthur Ward

Untie Teachers

Blocks of time to plan

Chances to work with others

Easy access to resources

Inspiration

Models

Mentors

**Opportunities** 

**Teaming** 

Ideas

Connections Step-by-step Help

Hardware without software is just junk, but software without teaching is just noise.

**Opportunities** 

Teachers need lots of opportunities. Every

teacher that takes an opportunity is a success

Lists of ideas

Link to sites

Cool examples

10 Dealing with Dips

How do you handle the implementation dip?

Making it a habit

Ongoing, supported projects

Infusion of new ideas

Join Projects

It's hard to quit once you get started.

http://k12science.stevens-tech.edu/curriculum/

boilproj/index.html

**Sharing Success** 

Seeking out cool projects Each 1, teach 1

Techie teacher in "convert pics"

Highlight in newsletter

Mini Grants

Support new ideas

I just need...a digital camera, a field trip

photo quality paper, a set of books

a vacation???

Infusion Ideas

I know the software, now what?

Beyond PowerPoint

Beyond HyperStudio

Show examples

11 Configurations

What's the most effective way to configure

computers in schools - singles, clusters, labs?

Effective, efficient, or appealing?

It depends on your students, teachers, build

ing structure, and curriculum.

I can please only one person per day.

Today is not your day.

Tomorrow isn't looking good either.

Think Use

One person, one computer

Two people, one computer

Small group, one computer

Mixed, computer clusters



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Entire class, computer lab Entire class, projector Think technology Computers + scanners & digital cameras probes/lab equipment printers data projectors video cameras microphones http://www.stolaf.edu/other/snap/cyberseasons.html 12 Role of Internet What's the role of the Internet in schools? The Internet is a tool for information and communication. Keep Current: Current events This day in history http://www1.sympatico.ca/cgi-bin/on\_this\_day Virtual Travel Armchair traveler Interactive field trips Simulated explorations http://www.dreamscape.com/frankvad/tours.html http://www.rims.k12.ca.us/iditarod/index.html http://www.globalearn.com/ http://www.goodearth.com/virtcave.html Multiple Perspectives Lumber Tobacco Exercise Cloning Guns **Endangered Animals** Recycling Information You need snow to ski. You need data, resources, and tools to make http://www.gov.pe.ca:80/lucy/index.asp http://scriptorium.lib.duke.edu/collections/africanamerican-women.html Instruction **Practice Tutorials** Role Playing Simulations http://www.japanese-online.com/ Communication Interacting online other classrooms other teachers other students parents community experts http://agcwww.bio.ns.ca/schools/classrm.html Collaboration http://earthdaybags.org/ Creation http://thinkquest.org/

http://www.gsn.org/cf/index.htm

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http://www.schoolnet.ca/home/e/index.html
Share & Reflect

Drop in on other schools

Provide an audience for learning http://www.sd81.k12.wa.us/Regal/DishmanHills/56DHill.htm

**Teacher Tool** 

Search online: textbooks, television, software http://www.teachtsp.com/classroom/timelineronline/tlineronline.html

#### 13 Protection

How do we protect kids from inappropriate materials?

Don't protect, prepare!

Internet is a reflection of our society, good and bad

What's the Goal?

Protecting children from inappropriate materials

Sheltering kids from "bad influences" Preparing kids for the "real world" Helping students make choices

#### 14 Emphasis

Where do we put our emphasis - tool-based software or curriculum-based software?

Let's emphasize learning. What tools and resources will engage learners?

Are we trying to turn out intelligent people, or test-takers?" John Holt, *How Children Fail* Do It All!

Make it meaningful Connect curriculum Focused Tutorials WebQuests

Project-Based Learning

http://edweb.sdsu.edu/webquest/matrix.html

**15 The Answers:** Where can I find the answers? Look to each other

When you feel like you're losing it...

...email a peer

When you have too many things going...

... ask for help.

When you're frustrated by the system...

...remember this workshop and smile!

Microsoft has announced that the release of Office 2000 has been delayed until the second quarter of 1901.

Macintosh - we may not get everything right, but at least we knew the century was going to end. *Douglas Adams* 



## Classroom Campfires:

### Don't Do Internet, Do Integrate!

#### **Annette Lamb**

alamb@eduscapes.com http://eduscapes.com/activities/index.html



http://eduscapes.com/activities/index.html Sparks

You need matches to start the fire and logs to keep it going

Web-Based Resources

http://www.sandiegozoo.org/special/pandas/ panda\_baby\_intro.html

http://www.globalschoolhouse.org/pr/index.cfm

http://168.19.116.22/pse/tb/tb.html

**Teacher Sparks** 

Good starting points

search tools for kids & adults

general starting points

teacher resource starters

Bookmark folders

Personal web page

http://www.rcls.org/search.htm

http://www.rcls.org/ksearch.htm

http://www.suite101.com/

http://tlc.ai.org/

http://www.gis.net/~peacewp/sear.htm

http://www.stemnet.nf.ca/CITE/themes.html

Sparks

What's your teaching area?

What do students need to learn?

What resources do you already have avail-

able?

In what areas could you use some additional information, examples, or excitement to build

the learning environment?

http://www.nutritionexplorations.org/

Selecting Sparks

Pick 1 OR Pick 4 assure 3 resources

varied perspectives

multiple sources

varied channels

Consider the needs & interests

http://www.stampsonline.com/gallery/ctc.htm http://www.achievement.org/galleryachieve.html

http://www.biography.com/

http://members.home.net/klanxner/lives/index.html http://www.s9.com/biography/

http://library.advanced.org/10320/Stamps.htm http://library.advanced.org/10320/Carver.htm

Your Mission: Go to the Subject Area Sparks

Consider grade level, entry skills reading ability

Bookmark (or favorite) a site for easy reference.

**Purpose** 

What's the purpose of your campfire? Is it for warmth, to cook food, or simply for fun?

Question: Why are we making this campfire?

Learning Outcome

http://antoine.frostburg.edu/chem/senese/101/

**Purpose** 

Draw students into web resources:

solve a problem

address an issue

answer a question

http://www.paducah.k12.ky.us/curriculum/

webquests.htm

http://www.angelfire.com/wy/peacequest/

Learning Outcome

Identify a specific learning outcome.

What do you want your students to be able to do or talk about at the end of the activity?

**Focus** 

It's not about Internet, the specific website,

or even the subject area.

It's about learning a skill,

acquiring a concept,

or solving a problem that will transfer to other learning

experiences down the road.

Outcomes

When identifying outcomes consider: cognitive, social, affective, kinetic metacognitive areas.

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Your Mission: Go to the Active Alternatives page.

Not: state, list, describe

Focus on higher-level, thought-provoking activities.

Share your active words and learning outcome with a peer.

http://www.chariho.k12.ri.us/curriculum/MISmart/ocean/sandhome.htm

#### **Embers**

Embers are the hot, glowing remains of a fire. It's the time to put on the fry pan, roast the

hot dogs, and make s'mores.

Don't just watch the fire, use it!

**Engaging Learners** 

#### **Embers**

Don't just read information off the Internet, use it!

Consider:

How you will activate the learning environment?

How will you engage students and keep them excited about learning?

http://www.pbs.org/ktca/americanphotography/ Introduction

Student with an overview

Provide background information

Draw student interest

picture or cartoon, quotation statistic or problem

Hook your students

http://politicalgraveyard.com/index.html Activity

Actively involve students in learning: explore, evaluate, organize, analyze, apply, solve, formulate, create, communicate Let students paddle

http://www.gcse.com/Maths/pre.htm

Your Mission: Go to the Engaging Embers page. Brainstorm some interesting products that students could create using the information found on the Internet.

http://cust3.iamerica.net/anyroddy/

Tools: Provide a range of tools

Word processing Database

Drawing, Painting Spreadsheet

Multimedia: audio, video Utilities

http://www.fi.edu/fellows/fellow3/jan99/coinproject/ home.htm

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Your Mission: Go to the Technology Tools page. Identify those resources that might be available in your school.

#### Directions

Give good instructions step-by-step instructions list of requirements

examples & nonexamples

models & samples

Stay flexible!

http://www.gis.net/~peacewp/webquest.htm

#### Timeline

Unlike a tree, you don't have centuries How long will students be working on this project?

What's realistic?

Give students guidelines

http://wneo.org/gasp/

Your Mission

Identify an engaging activity and design an project.

http://powayusd.sdcoe.k12.ca.us/pusdphs/dmoore/index2.html

Spotlight on Songs

Assess Student Learning Spotlight student success.

Share a story or sing a song around the campfire.

#### Why Assess

What have your students learned? Assessment isn't about testing and report cards.

It's about helping you and your students understand where you've been and where you still need to go to reach your learning outcomes.

**Process Assessment** 

It's the walk that matters

Product Assessment

It's the view at the end that matters http://edweb.sdsu.edu/triton/july/rubrics/

Rubrics\_for\_Web\_Lessons.html

http://memorial.sdcs.k12.ca.us/LESSONS/WWII/

WWIIunit/HyperStudiorubric.html

Your Mission: Go to Student Success

Identify ideas for assessing student performance.

Brainstorm alternative assessments to match your outcome and activity.

Make Camping Fun!



Ideas for Happy Campers!

Keep up to date

Find a home

Follow "new links" or "best links"

mailing list weekly hot list

http://school.discovery.com/schrockguide/sos.html

http://www.homeworkcentral.com/top8/

vsl\_top8\_list.asp

http://www.stemnet.nf.ca/CITE/emaillists.htm

Match to standards

National State Local

http://clearinghouse.k12.ca.us/c/@BtxgI2Y.3H5to/

bystandard.html

Do it regularly

Current events

This day in history

Word of the day

Math problem of the week

Project of the month

http://www.wordcentral.com/cgi-bin/bwwod.pl

http://www.Cool-Fact.com/

Preselect Sites

Don't camp in the dark!

Plan ahead and preselect quality websites.

http://www.lausd.k12.ca.us/web\_design/

lighthouse\_keeper/lighthouse\_main.html

Remember Visuals

You remember what you see.

Use sites with lots of visual representations.

Ask students to create

their own visuals.

http://www.thevirtualwall.org/

Chunk Your Project

You can't carry a tree, but you can carry

chunks of wood.

Chunk your project into reasonable pieces. http://members.aol.com/donnandlee/SiteIndex.html

Make Good Stew

Generate excitement!

Fun, flexible environment

http://www.artyastro.com/

Authentic projects Real world audiences

http://www.universitylake.org/primarysources.html

http://www.horus.ics.org.eg/

Provide Resources

A stool needs three legs

Provide multiple resources

Adapt to change

http://eduscapes.com/42explore/poetry.htm

http://www.gigglepoetry.com/

Reflect

Take time to reflect

Allow time for sharing and enjoying your

http://www2.lhric.org/pocantico/taverna/taverna.htm

**Encourage Uniqueness** 

Let students take their own path

Give students flexibility in the assignment

http://www.emulateme.com/

Watch from distance

Do demonstrate, guide, suggest, help

Don't do it

http://www.secretsatsea.org/

Don't Lose Anyone!

Keep them in sight

Use checklists, team meetings, and

processfolios to keep track of progress.

http://home.earthlink.net/~tsdobbs/go.htm

Watch Out!

You never know when you might have a

problem.

Watch for inappropriate links

Carefully save files

Stay organized

http://www.field-guides.com/trails.htm

Remember Water

Don't forget the water.

Remember the purpose of the activity. http://www.askasia.org/adult\_free\_zone/

afz frame.htm

Watch the Food

Too many beans can spoil a trip.

Take baby steps, Select tutorial sites

http://mgd.nacse.org/hyperSQL/lichen\_teach/

Be Prepared

Wear your boots, not your sneakers.

Plan student access:

bookmarks, worksheets, activity web pages

http://unidata.ucar.edu/staff/blynds/rnbw.html

Think Timeline

Finish before the snow falls

Be realistic

Build in a cushion

Be prepared Print out the sites

http://www.audreywood.com/mac\_site/activity\_pages/

activities\_page.html

Provide support

Lend a hand Work with another teacher

Help each other! Team with another grade

Annette Lamb • 3





## Prairies, Pioneers & Partnerships:

# Matching Standards, Resources, and Engaging Projects

Annette Lamb

alamb@eduscapes.com http://eduscapes.com

#### Overview

Align Content/Standards

Transform Traditional Activities

Create WebOuests

**Develop Project Partnerships** 

Manage Projects: Empowering Students

Content & Standards

Pioneers were disappointed to find how few supplies would fit into their wagon.

**Identifying Standards** 

National Gov't

National Groups

State Level

Local Level

http://www.negp.gov/

http://www.negp.gov/WEBPG10.htm

http://www.negp.gov/Reports/20nelson.htm

http://www.edweek.org/context/orgs/

http://www.aasa.org/index.htm

http://www.aasa.org/Issues/assessment.htm

http://www.neat-schoolhouse.org/Office/Teacher/

Classroom\_Related/Educational\_Associations.html

http://www.nsta.org/

http://www.ncss.org/

http://www.ncss.org/standards/toc.html

http://www.edweek.org/context/topics/assess.htm

State Level

Compare state standards

Use other states for ideas

Look for online ideas

http://putwest.boces.org/Standards.html

http://putwest.boces.org/StSt/Illinois.html

http://www.isbe.state.il.us/ils/default.html

http://www.isbe.state.il.us/ils/intro/history.html

http://www.springfield.k12.il.us/standards/fourth/

index.htm

http://admin.doe.k12.ga.us/gadoe/sla/qcccopy.nsf/

MainNav?OpenNavigator

http://www.uen.org/cgi-bin/websql/lessons/

query\_lp.hts?grade=4&area=3

http://www.ncrel.org/ncrel/sdrs/areas/gs0cont.htm

http://www.mcrel.org/standards/

http://www.mcrel.org/standards/articles/8-

questions.asp

http://www.mcrel.org/standards-benchmarks/

http://www.mcrel.org/resources/plus/

Lesson Plans

Take the easy route.

Find help!

Lesson plans Project ideas Web resources

http://encarta.msn.com/schoolhouse

http://www.microsoft.com/education/lesson/

default.asp

http://ericir.syr.edu/Virtual/Lessons/

http://scrtec.org/track/

http://l2l.ed.psu.edu/success/L2L\_INDX.HTM

http://thegateway.org/

http://sunsite.berkeley.edu/InternetIndex/

Pioneer Life

Don't let standards scare you!

Create charts

Match content

Toss the rest!

**Transforming Traditional Activities** 

To survive on the prairie,

pioneers had to modify their old ways and

learn new skills.

http://eduscapes.com/42explore/prairie.htm

http://mbgnet.mobot.org/sets/grassInd/main.htm

http://mbgnet.mobot.org/sets/grassInd/story/

index.htm

http://www.highlands.w-cook.k12.il.us/prairie/

prairie1.html

http://www.blackfootedferret.org/prairie.html#top

http://www.inhs.uiuc.edu/~kenr/tallgrass.html

http://www.tallgrass.org/

http://www.greatplains.org/npresource/1998/

ppregion/ppregion.htm

http://eduscapes.com/42explore/pioneer.htm



http://www.museum.state.il.us/exhibits/athome/1800/ welcome.htm http://lcweb2.loc.gov/ammem/today/may20.html http://tgjunior.advanced.org/6400/ http://www.bright.net/%7etomhoman/page31.html http://www.bright.net/%7etomhoman/page43.html http://www.carlinville.macoupin.k12.il.us/west/ frontier.htm http://www.osv.org/kids/articles5.htm http://eaves.math.utk.edu/~williams/Pioneer/ pioneer.html http://eduscapes.com/42explore/farming.htm http://eduscapes.com/42explore/oralhst.htm http://eduscapes.com/42explore/journl.htm Literature Ladders **Book Connections** Authors Lesson Plans Content Resources http://eduscapes.com/ladders/index.html http://eduscapes.com/newbery/86a.html http://www.harperchildrens.com/howabook/ pmstate.htm http://k12.albemarle.org/Sutherland/MPicard/ studentPublishing/authorEssays/maclachlan.html http://www.sdcoe.k12.ca.us/score/sarah/sarahtg.htm http://collaboratory.nunet.net/bookclubs/sarah.html http://www.amered.com/curr/mwspt.html http://www.eduplace.com/kids/rdg/kidviews/grade4/ sarah.html **Explore Lesson Plans** Match to your outcomes Transform a traditional activity **Action Word Ideas** Student Project Ideas Plan Trips Around Illinois Trace a historic journey Trace Sarah's trip http://mapquest.com Use Graphics Copy pictures make postcards write a story write a letter a day in the life http://www.ukans.edu/carrie/kancoll/graphics/ http://www.ukans.edu/carrie/kancoll/graphics/

**Modify Photos** 

http://members.aol.com/ntgen/hrtg/wol.html http://www.usps.gov/history/his1.htm

5Ws Project

Where are you? Who's with you? What are you doing?

Sarah's Prairie Life

Today and Yesterday Compare Maine & Kansas Prairie plant/animals

http://www.awav.net/prairie/

http://www.awav.net/prairie/prairie.html

http://www.wheatmania.com/

Sarah's Maine

Seashore Ocean Shells Sealife
http://coa.acnatsci.org/conchnet/do.html
http://www.uwp.edu/academic/biology/bmsm/
selshels.htm

http://www.wildlupine.com/ andrewruelphotography.htm

**Use Photos** 

Postcards Poems

Reports News articles

Wildflowers

List the wildflowers from the book

Ragwort

Create a prairie mural

Build an online wildflower trail

http://www.npwrc.usgs.gov/resource/literatr/wildflwr/wildflwr.htm

http://history.cc.ukans.edu/heritage/prairie/

prairie.html

Transforming Activities

Scanner

Scan seeds leaves

bark outdoor objects

Digital Camera

Photograph plants

ants animals

people objects

Paint Software

Draw maps

Create landscapes

Sketch plants

Combine scanning, photos, clip art

Sounds

Animals Folk music Outside sounds Instruments

Page 2

elsmore.htm



Real Objects Describe **Speculate** Compare Create Create Combine word process clip art markers paper boxes Expand Don't just scoop, apply... decide defend create persuade Natural Area Projects What's a prairie? plants animals objects water http://www.sd81.k12.wa.us/Regal/DishmanHills/ 56DHill.htm http://imc.lisd.k12.mi.us/wayne/alsummer.html http://imc.lisd.k12.mi.us/wayne/august/flowers/ august.html Prairie Exploration Plants Animals Murals Recreations http://ngp.ngpc.state.ne.us/wildlife/critters.html Try It http://ngp.ngpc.state.ne.us/sounds/sounds.html Copy a picture and a sound. Learn more about your animal! **History Projects** Living history farms and museums Artifacts recording creating http://westville.org/ http://www.museum.state.il.us/mic\_home/ Pioneer Tools Trace the history of a tool: then & now Create a tool matching game Identify the purpose of tools http://www.connerprairie.org/cp/agimp.html http://www.lis.ab.ca/walton/old/ http://www.lis.ab.ca/walton/old/butter.html Pioneer Food Food Recipes Healthy eating http://www.iron.k12.ut.us/schools/north/cookbook/ introduction.htm http://www.carlinville.macoupin.k12.il.us/west/ kitchen.htm

es03d.htm http://www.jerkyusa.com/recipes.html http://scholar.coe.uwf.edu/pacee/steps/two/west/ day11.htm http://tqjunior.advanced.org/6400/recipes.htm Pioneer Experience Compare pioneers from different areas and time periods http://heritage.uen.org/cgi-bin/websql/index.hts Pioneer Arts & Crafts Write step by step instructions Take digital pictures http://users.drak.net/magick\_manor/dip.html http://www.campbellusd.k12.ca.us/~kwoods/ woodscor.htm http://www.ontariocorn.org/husk2.html http://www.jb.man.ac.uk/~caj/wheel.html http://www.lis.ab.ca/walton/old/soaphome.html http://www.millennium-ark.net/News Files/ INFO\_Files/Soapmaking.html http://www.millennium-ark.net/News\_Files/ INFO\_Files/Lye\_Safety\_Precautions.html http://seasonalchef.com/appledehyd.htm http://www.marketreport.com/preserves21.htm http://www.cityblues.com/dryfood.htm http://eagle.cc.ukans.edu/~mdpear/jayhawk.html http://highlightpro.com/text.htm http://www.kinderart.com/littles/pquilt.htm **Explore Books** Prairie Pioneer Nature History Sarah, Plain and Tall Patricia MacLachlan Kansas Prairie Quilt-Block History of Pioneer Days Mary Cobb Pioneer Crafts Prairie Born Dave Bouchard Canadian Prairie Pioneer Workshop Judy Cole Mary Minturn Pioneer Crafts **Prairie Songs** Pam Conrad Nebraska Prairie

http://little.nhlink.net/nhlink/educatio/teaching/es/



Black-Eyed Susan http://projects.edtech.sandi.net/chavez/batquest/ Jennifer Armstrong batquest.html Dakota Prairie **Brainstorm Intros** The Ballad of Lucy Whipple Picture Ouote Karen Cushman Poem Situation Gold Rush Song **Buffalo Thunder** Task Patricia Wittmann Something doable & interesting series of questions Oregon Trail Fun with Nature summary to be created Plants Animals problem to be solved position to be debated Nature Gardening Wizardry for Kids creative work L.Patricia Kite require thinking! Gardening Nature Information Resources 365 Nature Crafts & Activities Specific, appropriate resources First Field Guide Wildflower web documents experts available via Internet National Audubon Society Canoe Days searchable databases on the net Gary Paulsen books and other documents Nature real objects Animals **Process Tops & Bottoms** List of activities **Ianet Stevens** Step-by-step instructions **Plants** Gardening Timeline Learning Advice Weslandia Paul Fleischman Describe how to organize info Guiding questions Civilization Creativity Directions to complete **Fantasy** http://eduscapes.com/ladders/ladders.html checklists, timelines Build a lesson concept maps Brainstorm pioneer & prairie topics cause-effect diagrams action plan Identify outcomes Locate 1-5 sites Evaluation Assess student work Create an activity Transform Activities checklists Creating WebQuests rubrics Some pioneers fought the prairie, while others Conclusion lived with the prairie. Bring project to closure. http://www.stbernard.org/WebQuest%20Activities/ Remind learners about what they've learned pioneer.html Encourage learners to extend the experience http://inst.augie.edu/~jamounta/west/quest.htm Other Elements Introduction Roles to play Group collaboration guidelines Dig In Motivation Motivating scenario Teacher Resources Sets the stage Provides background information http://projects.edtech.sandi.net/chavez/batquest/

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teacher.html

**Explore & Evaluate** Explore a webquest Evaluate a webquest Create a webquest http://edweb.sdsu.edu/webquest/webquest.html http://edweb.sdsu.edu/webquest/matrix.html http://edweb.sdsu.edu/people/bdodge/webquest/ buildingblocks.html http://edweb.sdsu.edu/webquest/webquestrubric.html **Brainstorm Topics** Prairies & Pioneers quilts crafts plants animals Create a webquest **Developing Project Partnerships** Although they often lived miles apart, pioneers relied on one another. http://askanexpert.com/ http://www.vrd.org/locator/subject.html http://www.gsn.org/project/index.html http://www.eduplace.com/projects/how2.html http://www.siec.k12.in.us/~west/online/join.htm http://www.kidlink.org/KIDPROJ/ http://www.pitsco.com/p/Respages/collab.html http://home.talkcity.com/academydr/nicknacks/ NNindex.html http://cleo.terc.edu/cleo/cleo-home.cfm http://www.eduplace.com/hmco/school/projects/ online.html http://www.hmco.com/hmco/school/projects/ index.html Connect with Class Another county state country http://www.epals.com http://www.ks-connection.com/penpal/penpal.html http://www.keypals.com/ Manage Projects Empower your students so they can survive on the cyber-prairie! Build an environment Provide... A variety of tools A place to start An engaging, classroom environment Provide support Step-by-step help sheets

Create a headquarters Bulletin board **Folders** Website Make it happen Focus on individual needs Keep it simple Find friends to help Make it real-world! Make it engaging! Have Fun! Annette Lamb alamb@eduscapes.com http://eduscapes.com

# **Books by Annette Lamb**

Newberys and the Net: **Thematic Technology Connections** Annette Lamb & Larry Johnson ISBN 1-891917-02-1 c2000 \$28.95

Virtual Sandcastles: Teaching and Learning at a Distance Annette Lamb & William Smith

ISBN 1-891917-01-3 \$23.95

Cruisin' the Information Highway: Internet in the K-12 Classroom (2nd Edition) Annette Lamb & Larry Johnson \$23.95

ISBN 0-9641581-6-7 c1995, 1997

Surfin' the Internet:

Practical Ideas from A to Z (2nd Edition) Annette Lamb, Nancy Smith & Larry Johnson ISBN 0-9641581-9-5 c1996, 1997, 1998 \$26.95

Spinnin' the Web:

**Designing & Developing Web Projects** Annette Lamb ISBN 0-9641581-9-1 c1998 \$26.95

**Building Treehouses for Learning:** 

Technology in Today's Classrooms (2nd Edition)

Annette Lamb

ISBN 1-891917-00-5 c1996, 1999

The Magic Carpet Ride: Integrating Technology into the K-12 Classroom (2nd Edition)

Annette Lamb

ISBN 0-9641581-8-3 c1997, 1998 \$23.95

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Each one, teach one

Ask three before me

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# Online Interactive Lessons Tools & Training

Volusia County Schools

**Pamela Laverty** 

Becky Ling

**Curriculum Technology Specialist** 

Science Teacher

# NatureShift! Linking Learning to Life

**<u>Title:</u>** Light Me Up

**Concept or Theme:** Electricity - constructing an electrical circuit.

**Discover Question:** How can you light up a light bulb?

Background: None needed

# Supplies/Materials:

- ♦ Flashlight bulb (1.5 Volt)
- ♦ Battery (C size works well)
- ♦ Nail (approximately 3 inches)
- ♦ Penny
- ♦ String, ribbon, cardboard, piece of plastic
- ♦ Special foil (approximately 6 in. x 6 in.). To make special foil stick clear contact paper onto the shiny side of aluminum foil. This is easiest if both rolls are 16 inches wide.

Place all supplies, except batteries, in a plastic (ziploc) bag. Provide masking tape on each table (this is very useful!).

#### **Procedures:**

This activity takes approximately 45 minutes with 1<sup>st</sup> to 3<sup>rd</sup> graders. Depending on learners' prior experience this time may need to be extended or shortened.

- 1. You can introduce the activity any way that is appropriate for your class. I have told learners that they need to help NASA repair the Mars Rover which has some broken wires. Thus NASA has asked them to figure out how circuits work.
- 2. Hand out the ziploc bags with the materials and a battery to each learner. I usually do not tell learners names for the objects but refer to them as "shiny stuff", colored stuff, etc.
- 3. Record learners' observations on the board. "The shiny stuff gets hot when I wrap it around the battery!" "There are 2 shiny ends to the batteries." "There are two shiny ends on the light bulbs."
- 4. Ask questions that are open-ended "What have you tried?" "What else could you try?" "What do you notice about your objects?"
- 5. Once some one has success encourage further exploration.
  - ♦ Can you light the bulb any other way?
  - What is the smallest amount of shiny stuff you can use to light the bulb?
  - What other objects work and don't work to light the bulb?
- 6. Introduce the idea of a circuit.
- 7. Make a list of what can and can not light the bulb. Explore other objects as well like pencils, pens, scissors, chair or desk legs etc.
- 8. Talk about list of objects that can light the bulb. What do they have in common shiny, hard, conduct electricity, conduct heat... Scientists refer to these objects as metal.

Steve Lindaas lindaas@dakota-science.org

http://www.natureshift.org



# Nature Shift! Linking Learning to Life

9. Discuss results from other extensions you may have explored.

#### **Internet Resource:**

None required. This is part of a NatureShift unit on electricity and magnetism that can culminate in controlling the Mars Rover telerobot.

#### **Assessment Ideas:**

Can the learner turn on the light bulb?

How many different materials can a learner use to turn on the light bulb?

#### **Extensions:**

- "Now that you have it light, make it bright?" Provide extra batteries of various sizes (AA, C, D). Does the size of the battery make a difference?
- Make a flashlight.
- Cut up a string of Christmas tree lights and hand out. Light one or a whole bunch with a friend.
- ♦ Make a game like "operation".
- Make a game where a loop has to trace a curvy wire. If they touch a light turns on.
- Make a robot with eyes and a nose that lights.
- Make a buzzer or motor work.
- ♦ Light a L.E.D. (light emitting diode)
- ♦ Discuss serial and parallel connections

# Age/grade level/accessibility adaptations:

This activity has been used successfully with 1st to 3rd graders as well as college undergraduates.

#### **Safety Considerations:**

- Drop anything that gets hot. This will happen if a battery is "short circuited" by connecting the top and bottom with a conductor like the aluminum foil.
- If this is a multi-day activity collect batteries.

Steve Lindaas lindaas@dakota-science.org



http://www.natureshift.org

# NatureShift! Linking Learning to Life

# **Explainer Hints**



# Hands-on Learning Hands-off Teaching

# Questions/approaches to use:

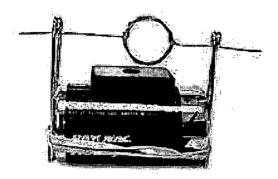
- ♦ What have you tried?
- ♦ What worked well?
- ♦ What could you do next?
- ♦ What else can you try?
- ♦ How many ways can you do this ...
- ♦ Can you use different materials?

Don't steal the joy of discovery!

- 1. **Do** let students find on/off buttons!
- 2. Do let students do weird stuff!
- 3. Do Encourage sharing!
- 4. **Do** Encourage exploration (breaking stuff can be okay)

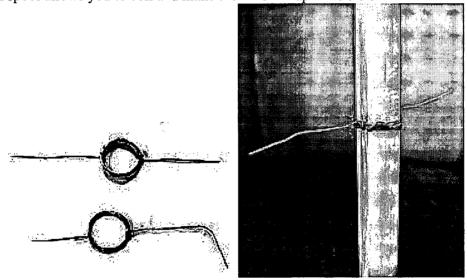
Steve Lindaas lindaas@dakota-science.org

# Simple Motor Directions



You will be building a simple motor using the materials you have been provided. This will require you to make a circuit (which you did when you made the light bulb light up), use the permanent magnet and make an electromagnet.

1. Use the enamel wire. Leaving a 3 cm tail on either side, wind the wire into a coil with a diameter slightly larger than 1 cm. Wrap each tail a couple times around the coil to hold it together. The wooden spool allows you to coil and make the finish wrap in its slots.



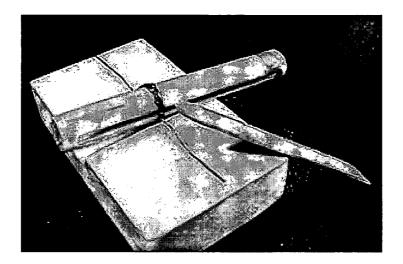
2. Remove the enamel from the top of both tails. If you place the spool with the wire coil on it in the groove of the wooden base you can scrape the enamel off of both sides using the sandpaper board.

NatureShift! Linking Learning to Life

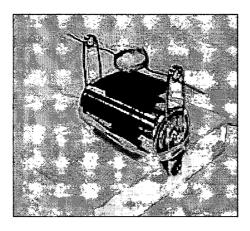
Steve Lindaas lindaas@dakota-science.org



1



3. Secure the safety pins to the battery ends with tape or a rubber band. Place the magnet on top of the battery and position the wire coil through the hinged ends of the safety pins that should be sticking above the magnets.

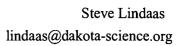


#### 4. Troubleshooting:

- If your wire just rocks adjust the balance. Balance is crucial so try bending/straightening the coil and tails. You can also add a small piece of tape to the coil to adjust the balance.
- If your wire coil does not spin, make sure that enough enamel is removed from the tops of both tails. You may have to scrape the wire with the sandpaper some more.
- If your wire coil does not spin, make sure that the enamel is removed from just one side of each tail and that it is the same side. Note: If you took off too much enamel, you can use a permanent marker to replace the missing enamel. Just draw a mark where you want to replace enamel.

2







# **Robot Directions**

The following are some hints to help you carry out your role as a multi-purpose robot today.

#### WHAT:

The Learners will be writing down instructions for a "multi-purpose" robot to make frosting and graham cracker snacks. [You are the "multi-purpose" robot!]

#### **PURPOSE:**

Demonstrate that a computer program

- 1. is a set of instructions.
- 2. must be exact to avoid problems
- 3. is not always fool-proof

#### TASK:

You MUST follow the directions <u>literally!</u> For instance, if the direction is to "Take the frosting out" you could get up and walk out (side) and continue down the sidewalk. The programmers will have to run up with a "stop and return" command written on a paper to get you to come back. Or perhaps if the direction is to "Take the frosting out and spread on the cracker" then you should take the frosting package and place it on the cracker package or place it on a cracker and smash it. Any of the following can cause a robotic meltdown or unexpected robotic behavior.

- They must specify which frosting to use.
- They must specify a utensil to use. (You can use the wrong end of the knife if you are being mischievous.)
- They must be specific in opening and closing packages. If a package is closed and you have no directions to open it you might spread frosting on the package. If a package is open and you have directions to open it you might have a robotic meltdown.
- They must be specific in locating objects. There will basically be two places for objects inside the "box" or on the table. If they do not specify the location your default is to look in the "box". If you do not find the object you can have a robotic meltdown.
- They should specify what is to be done with the snack (hopefully "feed to a human"). A mischievous robot might eat the snack and then have a robotic meltdown. If nothing is specified a robot may walk over to the trash and throw a frosting sandwich away.
- If you are having trouble reading the directions you can ask one of the RoboTechs to read what they have written. I don't want to worry too much about neatness.

Try to think of any way to follow the letter but not the intent of the program. Obviously, if the frustration index gets to high you can choose to be a tad less picky. Overall have fun!

#### Robotic Meltdown

A robot that is having a meltdown may make weird sounds, zaps or make weird twitching motions. After the meltdown the robot can not move (at least not much) until it is restarted and given new instructions.

Steve Lindaas lindaas@dakota-science.org NatureShift! Linking Learning to Life



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# O'Neill, James

Energized, Paperless Research Projects

Original Author Submissions

# Ostrager, Jennifer

Cablevision and Bethpage, NY: Partnering to Build a Lifelong Community of Learners

Cablevision and Bethpage Unified Free School District: Timeline of a Partnership

1999 CTPAA Beacon Award Winner

Cablevision Collaborates with Educators for powertolearn.com

Cablevision Teaches Seniors How to Surf the Net

Kramer Lane Teacher Creating Internet Curriculum

School's Out

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## Palacio, Joycelin

Beyond Multiple Choice and Scores: The IMMEX Problem-Solving Assessment Approach (pdf format)

## Petersen, Ruth

Glenn Learning Technologies Project

NASA Glenn Distance Learning Program

Original Author Submissions

## Pook, Charlanne

The Kids are Running the School, School Network that is!

**Original Author Submissions** 

## Porter, Karin

Empowering Teachers Through CFBISD's Technology Integration Academy

# Price, Catherine

What is the Learning Cycle?

Planning a Learning Cycle

Technology Self-Report

**Original Author Submissions** 

## Reid, Susan

Online Learning with Amazon River Dolphins (pdf format)

# Resta, Paul



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A Virtual Tour of the National Museum of the American Indian Exhibitions: Creation's

Journey and All Roads Are Good

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Selena On The Move: Bridging Internet Learning

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## Roberts, Serena

Multiple Intelligences Survey

Enhancing Cross-Curricular Projects with Technology - Agenda

Original Author Submissions

## Simeone, Mary

Original Author Submissions

# Sindhikara, Jean

"Workshops that Work": List of Electronic Handouts

**Internet Searches for Science Teachers** 

Using a Digital Camera to Enhance Learning

Computer Graphics for Teachers

"Workshops that Work": Computer Skills Template

Original Author Submissions

# Siwinski, Carol

Jump Start Integration with the Internet

General Information for Web Graphics and Publishing a Site

Fireworks: Attaching Text to a Path

Fireworks: Making an Animation

Fireworks: Masking an Object

Fireworks: Saving a Fireworks Document

Fireworks: Working with Text

Fireworks: Working with Bars and Buttons

Original Author Submissions

# Sprague, Debra

<u>Project DEVISE: Creating Virtual Reality Environments for Learning Disabled Students</u> (pdf format)

# Stabler, Hank





Policy-Driven Technology Reform and Implementation
Original Author Submissions

## Steinhaus, Kurt

Communicating a Strategic Vision of Education Technology to Key Decision Makers
Original Author Submissions

# Stephens, Tammy

<u>Using Computer Manipulatives in Elementary Math Instruction</u> <u>Original Author Submissions</u>

# Sun, Jeff

**Evaluating Technology's Impact on Teaching and Learning** 

**Technology Evaluation, Organizing Questions** 

**Developing Indicator Statements** 

Mapping Your District Technology Plan

technology Funding

**Original Author Submissions** 

# Taylor, Lydotta

<u>Professional Development: A Comprehensive Approach ...</u>
<u>Original Author Submissions</u>

# Thurston, Catherine

CTER OnLine: Developing a community of practitioners via advanced technologies Original Author Submissions

# Tichenor, Caylen

Moving Beyond Hidden Roadblocks to Successful Technology Programs Original Author Submissions

# Energized, Paperless Research Projects

James O'Neill and Carleen Smith Buffalo Grove High School 1100 West Dundee Rd. Buffalo Grove, IL 60089

PH: 847.718.4075 FX:847.718.4022 joneill@dist214.k12.il.us csmith@dist214.k12.il.us

Each of the following will link to the appropriate site for information on the paperless research project.

# Planning and Resources

- 1. Rationale for Research Project, a list of reasons teachers give research assignments and how these paperless research projects meet most of them.
  - 2. List of Disaster Topics, over 50 researchable disasters (some of them are Chicago-area based),
- 3. List of Contemporary Problems Topics, taken from back issues of CQ Researcher, these 100+ topics are divided into categories for easy student selection.
- 4. Calendar for Project, a calendar from a past use of this project illustrating how students spend their time researching and learning the software.
- 5. Bibliographic Forms, MLA format bibliographic entries for the most popular sources students use in their Works Cited pages.
- <u>6. Guide to Referencing Research</u>, a guide that shows students how to incorporate internal referencing into their written work for various types of sources.

# Idea Processing

- 7. Idea Cache, a method to assess student's knowledge of the topic and generate ideas that will guide the research.
- 8. The Double Entry Journal, a guide for the student on how to take notes and to make assessments and generate questions about the information gathered as he takes notes.

# **Presentation Project**

9. Presentation Project Assignment, a list of requirements for the project based on the rubric the teacher will use to assess the student's work.



Energized, Paperless Research Projects

- 10. Rubric for Presentation Project, a ten-point descriptive rubric that covers everything from use of graphics and speaking ability to accuracy of information and audience participation.
  - 11. Instructions for PowerPoint, a step-by-step, easy-to-use guide for creating a PowerPoint Presentation.

# Web Page Project

- 12. Web Page Project Assignment, a list of requirements for the project based on the rubric used to assess the student's work.
- 13. Rubric for Web Page Project, a ten-point descriptive rubric that covers everything from use of graphics and workable links to accuracy of information and referencing technique.
  - 14. Claris Home Page Instructions, a step-by-step, easy-to-use guide to building a web pages using this popular software.

# THE POWER TO LEARN"

# Cablevision and Bethpage, NY: Partnering to Build a Lifelong Community of Learners

Presenters: Terrence Clark, Bethpage Schools

Tamara Black, Cablevision Systems Jennifer Ostrager, Cablevision Systems

Cablevision Systems and the Bethpage Union Free School District formed an educational partnership in 1998 to study the impact of technology on a community. Focusing on technology as an agent for positive change, Cablevision and Bethpage Schools identified four major technology issues facing school districts. Using Bethpage as a model, the partnership tried to find solutions that could be replicated in other school districts. The four areas of concern and the proposed solutions include:

# 1. Staff Development

- . Teacher Institutes
- b. Collegial Circles
- c. Teacher Conference Days
- d. E-Mail Training

# 2. Emerging Technologies/Total Cost of Ownership (TCO)/Obsolescence

- . Thin-Client Lab
- b. Web Server housed at Cablevision
- c. E-Mail Server housed at Cablevision

## 3. Gender Equity

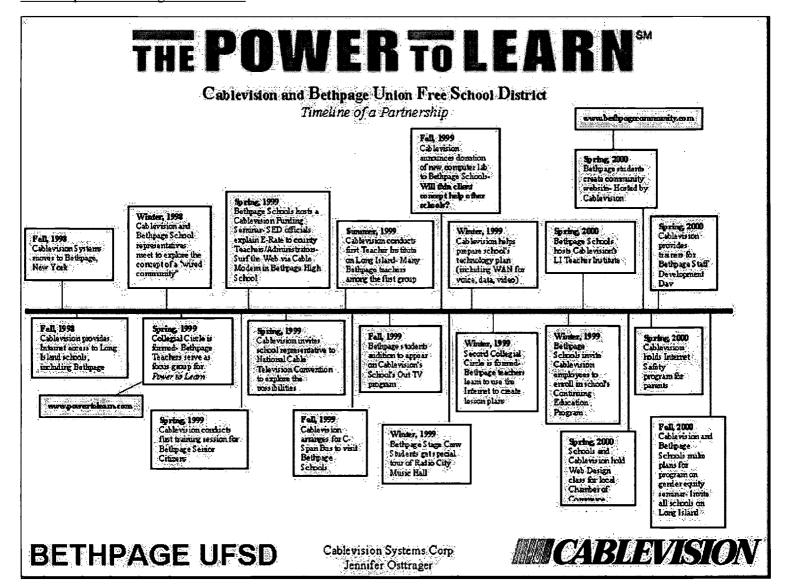
- . Planning K-12 Forum planned for next year
- b. Work with District Personnel, PTA, Cablevision, Possibly Local College

# 4. Home-School and Community Connections

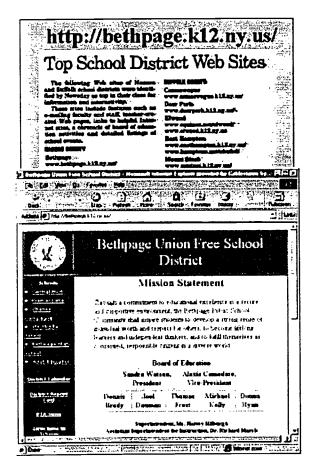
- . Bethpage Community Web Site, connecting schools, businesses, civic/religious, and recreational facilities.
- b. Senior Citizen Training (two years)
- c. High School Computer Lab open to Community Members
- d. Assist as mentors for 8th Grade Curriculum- Web Folios
- e. Internet Safety Seminar for Parents

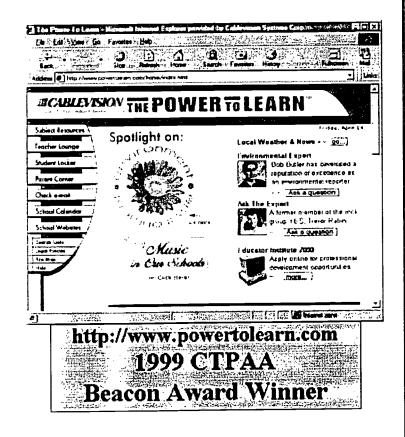
# BETHPAGE UFSD





# THE POWER TO LEARN





**BETHPAGE UFSD** 

Cablevision Systems Corp Jennifer Osttrager **II CABLEVISION** 

# THE POWER TO LEARN"

Cable in the Classroom Magazine, March 2000

# CABLEVISIONNEWS



http://www.cablevisios.com - http://www.powertolears.com

# Cablevision Collaborates with Educators for Powertolearn.com

Cablevision enhanced its commitment to providing high-speed. Internet connections to every public and private school and emmunity library in its service areas with the hunch of the Power to Learn Web site, in interactive educational site. From the beginning educators played a vital role in developing both the site's educational content and its virtual community, an area that supports technology-enriched learning experiences.

To facilitate participation in this virtual community. Cablevision worked hands-on with a group of educators from the Bethpage school district in Long Island, N.Y., to develop authentic educational activities and resources. For five weeks, from December 1990 to January 2000, the educatory met weekly for two-hour Curticulum Collaboration sessions. The group spent part of its time searching the Internet for resources that its members would use in their classrooms and recommend to other educators. Educators rated

the sites and posted their reviews on Power to Learn. In addition, the teachers integrated the Web-based resources that they found into their curriculum as they designed lessons for use in their own classrooms. They posted their lessons online, where they are free to all educators who visit the site.

Gina Rüfrano. a fourth-grade teacher in Bethpage who partici-

pated in the group, located and evaluated the Tenement Museum Web site (http://wnet.org/archive/tenement) during her work in Curriculum Collaboration. "My students were able to take a field trip to the Tenement Museum without leaving the classmom." she explained. "The kids can read about the history of immigration and walk through several restored tenements using their mouse."

The Curriculum Collaboration group at Bethpage is one of the many ways



Bithpage educators help Cablenision develop content for the Power to Learn Web site.

that Cablevision is supporting the education community as they move toward integrating technology into the classicom. One goal of the sessions was to provide edueators with the necessary rools to design lessons incorporating the Internet. But it was just as impurement for participants to gain a greater understanding of the potential that technology offers education.

To water orthonory of the omine resources of level by Californian, go to the Power to Learn Web nor (http://www.proventolearn.com).

BETHPAGE UFSD

**CABLEVISION** 

# THE POWER TO LEARN

# Cablevision Teachs Seniors How To Surf The Net



Bethpaga High School recently had a new type of student surling the Web - senior citizens. The Cablevision Education Department conducted an Internet training seminar for senior citizens in the Bethpage community. The threepart seminar was designed to familiarize local area residents with how to use thounternet.

Participants were introduced to the layout of a Web page, basic. Internet vocabulary and learned how to use the Web as an effective research tool. Upon completion of the seminar, seniors left with the

knowledge and confidence releded to navigate the Web and utilize free e-mail accounts.

"Many of today's older citizens have a keen desire to learn about computers and the available technology," said Joan Hendricks. Senior Director of Community Affairs, Cablevision. . "Cablevision was happy to reach out to the community and provide this lantastic epportunity."

Pictured is Donha DeSolo, Education Manager, instructing the

group of seniors.



# BETHPAGE UFSD



# THE POWER TO LEARN

Bethpage Tribune, March 31-April 6, 2000

# Kramer Lane Teacher Creating Internet Curriculum



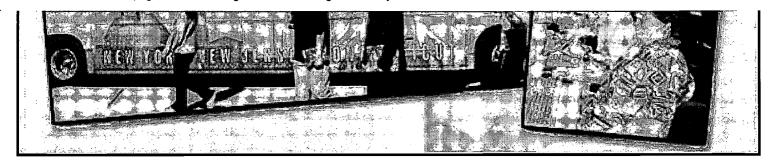
Bethpage Educator Creating Internet Curriculum - Vincent Perez a teacher at the Kramer Lane School, is working with Cablevision to use a commercial free web site, powertolearn.com, that allows leachers to leverage the power of the Internet by coordinating cyberspace lessons with classroom activities. Recently students using powertolearn.com found themselves "speaking" to Nobel laureate Dr. James Watson, codiscover of DNA, as part of the web site's effort to help teachers expand the horizons of their students. Joining Mr. Perez is Dominic Antonacci (left) Cablevision Education Manager for Long Island.

# BETHPAGE UFSD



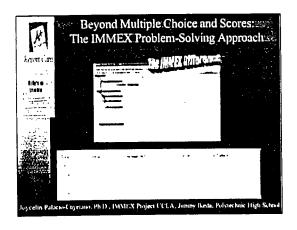
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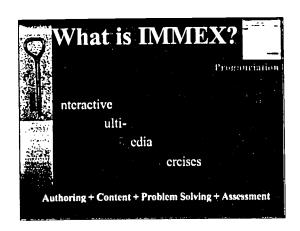


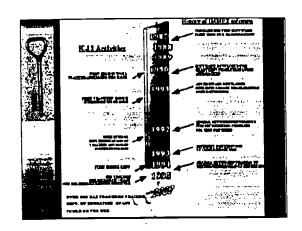


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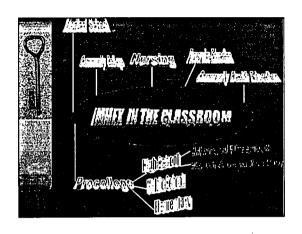


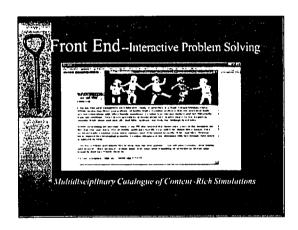


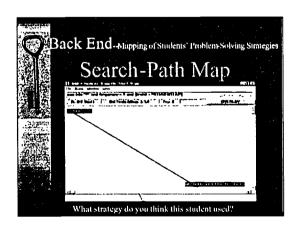


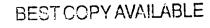




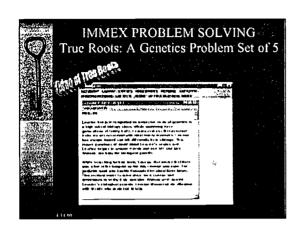


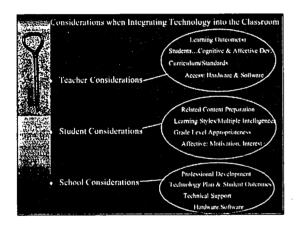


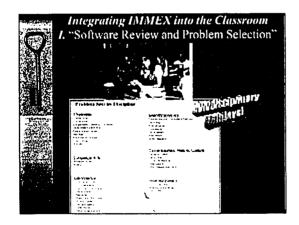


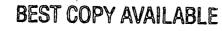










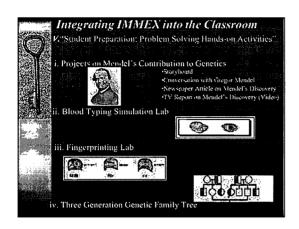


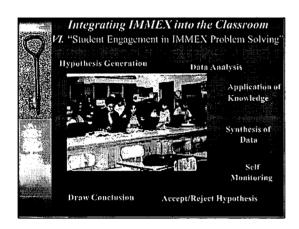


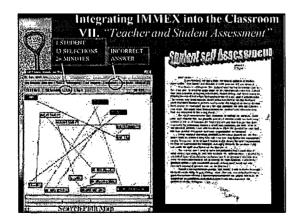
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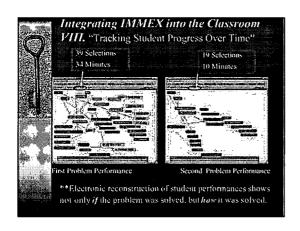
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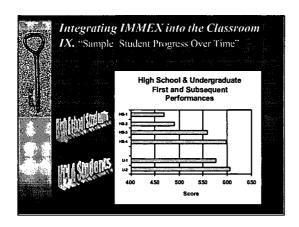


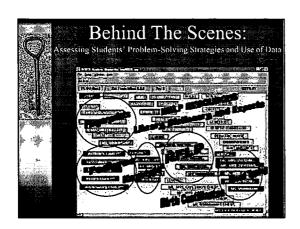






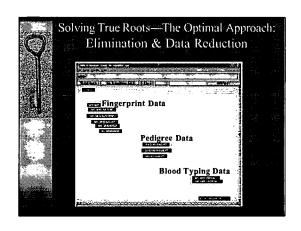


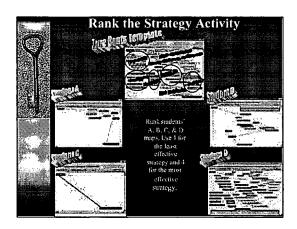


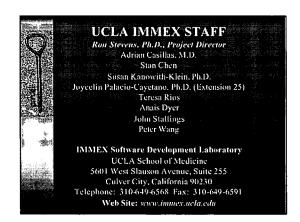


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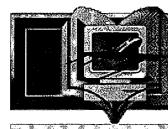








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# GLENN LEARNING TECHNOLOGIES PROJECT



# http://www.lerc.nasa.gov/WWW/K-12

# Aeronautic Educational Resources





# Beginner's Guide to Aeronautics

- Beginner's Guide to Aerodynamics
- Beginner's Guide to Propulsion
- EngineSim
- FoilSim



Aeronautics Lessons and Activities

- Aeronautics Activities
- Rocket Activities
- Wind Tunnel Experiments for Grades 8-12



- FoilSim
  - O Download and Installation Instructions
  - Manual and Problem Sets
- National Math and Science Standards



- Report on Distance Learning Survey Results
- Student/Teacher Videoconferencing Workshops
- WVIZ/NASA Educational Channel
- NASA Distance Learning



- Proficiency Resource List
- 9th Grade Math Practice Exam
- Links to Online Sites to Improve 9th Grade Science Proficiency



Teacher Created Yeb Pages

Summer Workshop Projects

# Internet Access Research



Whitney Young Middle School Wireless LAN Project



Live Cybercast

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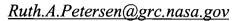


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# NASA Glenn Distance Learning Program Ruth Petersen





# http://www.grc.nasa.gov/WWW/K-12/CoE.Coemain.html

# **Descriptions of Student Presentations**

Descriptions of Student Tresentations		Grade
General Topic	Presentation Title	Level
Aeronautics - Space Transportation	Aeronautics; High Speed Flight; Incredible Lever, The	K-12
	Aircraft Safety and Icing Research, Meet a NASA Employee Involved in Aeronautical Research	7-12
	Introduction to EngineSim, Introduction to FoilSim, Topics in Aerodynamics and Propulsion, Tours of NASA Glenn Research Center Facilities	5-12
	History of Humans in Space, History of Rocketry	4-12
	Propulsion	4-6
Human Exploration and Development of Space	Human Exploration and Development of Space, Human Exploration of Mars and the Solar System	K-12
	Advanced Space Propulsion Concepts	9-12
	Humans to Mars, Exploring Mars: Parts 1-5	4-12
Earth Science	Mission to Planet Earth	K-12
	Space Communications Office Workshop Series (The workshops are listed in the order in which they are to be presented.): Introduction to Telecommunication Concepts, Two Forms of Electronic Communications, Getting More Users on a Single Telecommunications System, Networks and the Internet, Satellites and their Orbits, and Satellite Communications.	9-12
		fe i
Space Science	Mars; Moon, The; Scaling the Cosmos; Space Science; Space and the Solar System; World of Robots, The	
10 The Control of the	Elements of Space	K-6
	Energy from the Sun	9-12
	Comets	5-8
	Travel to Distant Stars	5-12
	Cassini Mission to Saturn, Exploration of the Solar System, Galileo Mission to Jupiter, Space Questions	4-12
Miscellaneous	Fermi's Piano Tuner - Making Estimates in Physics; Have You Looked at Your Calendar Recently?; Mathematics: Science of Numbers	9-12

**Teacher Workshops** 





The following workshops are offered for grades 3-12 math and science teachers:

- Introduction to Aerodynamics and FoilSim
- Introduction to Propulsion and EngineSim
- Using NASA Educational Internet Sites in the Science Classroom.

## **Registration Information**

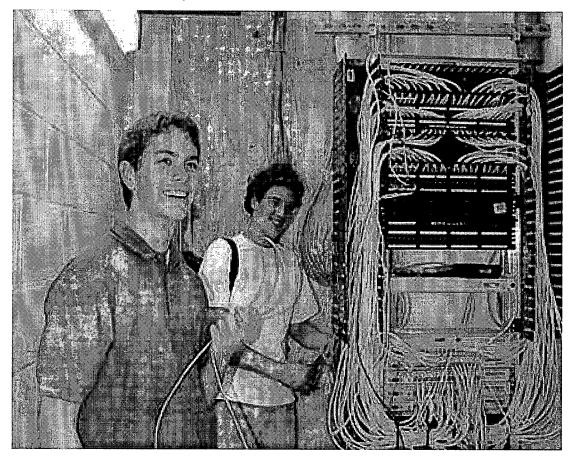
- 1. At least four weeks before the video conference, complete the online registration form.
- 2. Videoconferences for students can be scheduled Monday through Friday during the regular school day, Eastern Standard Time (EST). Mornings are the best time to schedule student videoconferencing workshops. Teacher workshops are normally scheduled at the close of the regular school day, but they may be scheduled at other times upon request.
- 3. Videoconferences are scheduled on a first-come, first-served basis. All events are subject to cancellation pending adequate registration. Video conferences may be preempted by official NASA programs.
- 4. Preference is given to consortiums with three to four sites participating.
- 5. NASA Glenn does not charge a content provider fee for the workshops. In order to continue the program, however, fees may have to be charged in the future.
- 6. A test connection with NASA Glenn should be scheduled for first-time participating sites. Ruth or Carol will make arrangements for a test connection.
- 7. You will be expected to place the calls to connect to the NASA Glenn videoconferencing room for the test and the presentation.
- 8. If necessary, notify your videoconferencing network provider of the conference and schedule the time. Allow time to connect and test the connection at the beginning of the videoconference and for questions from participants at the end.
- 9. Participants are asked to complete an online evaluation form at the close of the videoconference.
- 10. To register for a conference, please complete the online registration form.

#### For additional information contact:

Ruth Petersen at <u>Ruth.A.Petersen@grc.nasa.gov</u> or (216) 433-9714, or Carol Galica at <u>Carol.A.Galica@grc.nasa.gov</u> or (216) 433-5112.

# The Kids are Running the School, School, School Network that is!

Presented
by
Charlanne Pook
District Technology Coordinator
Jessamine County Schools
cpook@jessamine.k12.ky.us
and
Barbara Barr
Technology Integration Specialist
Jessamine County Schools
bbarr@jessamine.k12.ky.us



# Opportunities for All Ages Activities in which our students participate:

#### Infrastructure

## **Technological**

Preventative Maintenance Trouble Shooting Repairs Phone Support

# KTLN/CenterNet (Video Tele-conferencing)

# **Special Projects**

Authentic involvement

# **Training**

Manuals In-Service Just In Time Training



# Planning and Organization

Planning Meetings Meet with vendors Make arrangements Office assistance

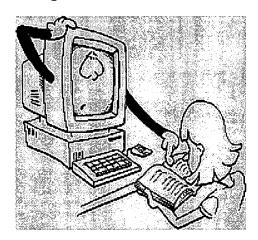


# Structuring the Helpdesk Program

- Begin with the end in mind!
- Planning
- ♦ Rules/guidelines
- Real world work experience
- System of checks and balances
- Flexibility
- Building process
- ♦ Student Handbook
  - ⇒ General Information
  - ⇒ Responsibilities
  - ⇒ Day to Day
  - ⇒ Contacts
  - ⇒ Purchasing
  - ⇒ Personal Growth
  - ⇒ Technical Procedures

# Jessamine County Schools District Technology Office Hiring Procedures

- Student employees must be recommended by a teacher or staff member.
- ♦ Student must be a member in good standing with their school STLP.
- Students must fill out an application.
- ◆ Student must get 2 letters of recommendation.
- ♦ Student must submit application, resume, and letters of recommendations to the District Technology Office.
- Student must schedule an interview.
- Student must attend orientation training.



# Jessamine County Schools District Technology Office Expectations of Student Workers

- Keep a weekly time sheet
- ♦ Check email daily as most information is relayed this way.
- ♦ Adhere to school dress code
- ♦ Be pleasant to co-workers and visitors to the District Technology Office
- Keep a portfolio of their work
- ♦ Clean up after themselves
- Attend training sessions
- ♦ Call if unable to work at a scheduled time
- Always be courteous and professional in each work environment

# Jessamine County Schools District Technology Office

# **Student Work Procedures**

# Procedure Upon Arrival at Work:

- ♦ Check in with the Help Desk Coordinator
- ♦ Check work folder for the specific school where you will be working that day
- ♦ Look over Help Desk Tickets to make sure you understand the specific problems to be addressed.
- ♦ Check with MAC or PC technician to explain what you would do to solve each Help Desk ticket.

# **Work Procedures:**

- ♦ When you arrive at the school, remember to check in with the STC/TRT.
- ◆ Introduce yourself to the teacher/staff in the room/office where you are working.
- Be willing to call from individual schools to receive additional technical support for problems.
- Upon completion of the work assignment, explain to the teacher/staff what was done.
- ♦ If the problem cannot be resolved, explain the next step or action.
- Clean up after yourself and put things back!
- Before proceeding to the next Help Desk Ticket, write a detailed explanation of the steps taken to resolve the problem.
- ♦ Upon returning to the District Technology Office, report each specific problem you worked on or the specific steps which need to be taken to complete the job.

# Empowering Teachers Through CFBISD's Technology Integration Academy



# Carrollton · Farmers Branch

Independent School District

NECC 2000 Presentation

by

CFBISD's Instructional Technology Specialists (LaDonna Conner, Barbara Hunt, Jan Jaeger, Karin Porter)

- <u>NECC PowerPoint Presentation</u>
- TIA Resources
  - Proposal



- Faculty Introduction of TIA PowerPoint
   Presentation
- Application Cover Sheet
- Application
- Application Evaluation Rubric
- Request for Donations Letter

# What is the Learning Cycle?

The learning cycle consists of three instructional phases.

- . Exploration Phase
  - 1. The students work in cooperative groups of two to five individuals.
  - 2. The students are provided instructions to follow, or a problem to solve.
  - 3. The students actively manipulate materials, make observations and predictions, gather data and information.
- B. Concept Invention or Term Introduction Phase
  - 1. The teacher asks a series of "guiding" questions (verbal, written) that lead students to discovering the main idea(s) of the activity.
  - 2. Students discuss then write this "idea" as a group.
  - 3. Students present their group idea to others, verbally or on the board.
  - 4. Using students' explanations and/or drawings, the teacher points out or asks students to indicate similarities among the responses from the groups. The teacher allows discussion to take place and allows groups to change explanations if they wish.
  - 5. With teacher assistance, the class comes to consensus using their own language. The teacher writes the class idea for all students to see and record.
  - 6. The teacher provides the term(s) for that concept/idea that the students invented.
- C. Expansion or Application Phase
  - 1. This phase is completed to help students organize the new idea they have invented with that which they already know (i.e., connect/attach thought with thought).
  - 2. Activities in this phase could include almost anything (further experimentation, projects, Internet searches, videos, presentations, writing, etc.).
  - 3. The expansion helps students connect new ideas with occurrences in their everyday lives

# Planning a Learning Cycle

# Planning for student exploration

Students must have concrete materials and experiences if they are to learn concrete concepts. Abstract concepts are largely inappropriate, even with concrete materials, until at least age 15 for most pupils.. Use these guiding questions:

- What do I want the children to learn? (goals, objectives, attitudes, processes, products)
- What concept(s) will be invented?
- What activities must the students do to find and to construct the needed data?
- What kinds of records should the students keep?
- What kinds of instruction and encouragement will the students need?

# Planning for concept invention

The main purpose of this phase is to reach mental equilibrium through accommodation, as described in the theory of Jean Piaget. Here the students must focus on their primary findings from the exploration, and the teacher must assist them by introducing proper language or concepts labels. The teacher's task is to lead students through a discussion (individually, small group, or whole class) so that students can discover the concept by inventing it for themselves. The teacher's technique is to question skillfully so that students use the experiences of their explorations to construct scientific meaning. The teacher acts as a facilitator and introduces any special vocabulary that must accompany the concept. Plan this step carefully so that it remains a student-centered activity, lectures must be minimal. Use these questions as you plan for this part of your lesson:

- What kinds of information or findings are students expected to provide?
- How will the students' findings from the exploration phase be reviewed and summarized?
- How can I use the students' findings and refrain from telling them what they should have found, even if they are incorrect or incomplete?
- What are the proper concept labels or terms that must be attached to the concept?
- What reasons can I give the students if they ask me why the concept is important? (This question leads to the next phase: Expansion)

# Planning for expansion

The purpose of this phase is to help students organize their thinking by applying what they have just learned to other ideas or experiences that relate to the lesson's concept and to assist the students in expanding their ideas. It is very important to use the language of the concept during the expansion of the idea phase. Plan this phase for student involvement. Consider using these questions to guide your thinking:

- What previous experiences have the students had that are related to the concept? How can I connect the concept to these experiences?
- What are some examples of how the concept and the activities encourage the students' science inquiry skills?



- What examples can be used to illustrate the interrelationship of science and technology and the contributions of each to society and the quality of life?
- In what ways has science benefited the students personally?
- What are examples of how science has influenced our society, policies, and laws?
- What have been the dominant ideas of science throughout recorded history, and how have those ideas and the nature of science changed over time?
- What new experiences do the students need in order to expand on the concept?
- What is the next concept related to the present one? How can I encourage exploration of the next concept?

# Planning for evaluation

Go beyond standard forms of testing. Learning must occur in small increments before larger leaps of insight are possible. Your evaluation can be planned in terms of outcomes and pupil performances. Several types of records are necessary to form a holistic evaluation of the students' learning and to encourage conceptual understanding as well as process skill development. Continual evaluation is needed, not just end-of-chapter or end-of-unit testing. Evaluation can occur at any point in the lesson. Consistent evaluation can help reveal misconceptions before they become deeply rooted. Ask yourself:

- What key questions should I ask to encourage deep exploration?
- What questions can I ask to help students think about their data in an effort to construct realistic concepts?
- What questions will expand conception and achieve several science goals?
- What behavior (mental, physical, attitudinal) can I expect from the students?
- What hands-on assessments can the students do to demonstrate the basic skills of observation, classification, communication, measurement, prediction, and inference?
- What assessments can students do to demonstrate the integrated skills of identifying and controlling variables, defining operationally, forming hypotheses, experimenting, interpreting data, and forming models?
- What pictorial assessments can students do to demonstrate how well they can think through problems that require both knowledge and the integration of ideas?
- What reflective question assessment will indicate how well the students recall and use what has been learned?

# Click to open author's original document.

# **Technology Self-Report**

Name			

# **Computer Skills**

Following is a list of general computer skills which would be useful for success in technology-integrated instruction. Read each item and check the response which describes your skill.

I can:

Yes

No

Unsure

- 1. Start up, reboot, and shut down a computer
- 2. Start and quit a program stored on the hard drive
- 3. Save, copy and retrieve files to and from a floppy or the hard drive
- 4. Save the same file in more than one version
- 5. Open and close menus and windows
- 6. Move and resize windows on your desktop
- 7. Navigate a directory structure to find files
- 8. Type at least 40 words a minute
- 9. Create a word processing document
- 10.Print a word processing document
- 11.Use spell checking to help revise my work
- 12.Cut/copy text from one document and paste it onto another
- 13.Use a projection device to show and share computer output
- 14.Cut/copy text from one application to another
- 15.Log onto the local network
- 16.Retrieve and delete e-mail messages
- 17. Create, send, forward and reply to e-mail messages
- 18.Distinguish between an e-mail address and a web address
- 19. Send e-mail to a group
- 20.Post messages to online discussion lists or bulletin boards
- 21.Locate and access information using WWW search tools
- 22. Apply common online etiquette, rules and safeguards
- 23. Check the credibility of Internet resources
- 24. Save and manage a list of favorite web addresses
- 25.Use the online catalog system in the library

# **Computer Resources**

This section asks about the computer resources which are available to you at home and at work.



Needs- and Site-Based Professional Development: Inquiry and Technology Learning 26. Which of the following describes your home computer? (check if sure; ? if not sure; blank if no) Do not have home computer Computer has printer \_Computer has modem Phone line available to computer Computer has CD ROM Drive Connected to Internet Service Provider \_Computer has sound card & speakers My e-mail account is accessible there 27. Which of the following describes your workplace computer? (check if sure; ? if not sure; blank if no) Do not have workplace computer Computer has printer \_\_\_\_Phone line/network line available to computer \_Computer has modem Computer has CD ROM Drive Connected to Internet Service Provider Computer has sound card & speakers My e-mail account is accessible there Learning about and with Technology Please circle the letter of the response which best describes you. 28. When I am asked to use software or technologies that I haven't used before: a. I look forward to it. b. I feel apprehensive, but try anyway. c. I put it off or try to avoid it. 29. When learning new technology, I believe I learn best: a. when I can listen to an explanation or see a demo first. b. when I can read manuals or written materials first. c. by trial and error and discovery. 30. I prefer learning: a. on my own. b. with a peer or two. c. as part of a group led by an instructor.

# **Open-Ended Response**

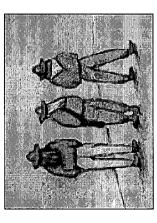
For what do you currently use a computer in your home and workplace?

# Addosolide

in a project-based learning environment. The promotes and supports science investigation eight, although elements are applicable in Virtual Explorers' Amazon River Dolphins website is geared for grades five through primary and secondary classrooms. Teachers worldwide are provided with experilearning experience in their own classrooms. ence in web-delivered instruction, enabling them to facilitate an active and meaningful

appreciation of biodiversity and conservation. observation and research skills, helping them to develop their own understanding and Students benefit from learning scientific

models and leaders in science and technology. Special emphasis is placed on females as role

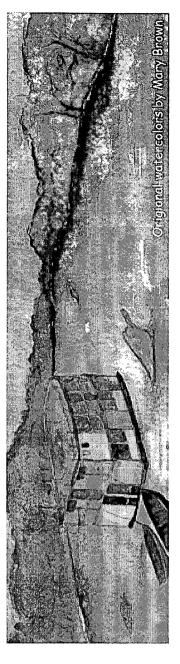


# A free and safe website

The Virtual Explorers website

- doesn't require passwords.
- has no advertising banners on its pages.
  - uses guest book e-mail addresses only for updates.
    - links only to teacher-approved sites.

# www.virtualexplorers.org



# Five sections enhance interdisciplinary study

# Getting Ready

- Meet the team, volunteers, and researcher.
- preparation, including necessary travel Learn about the extensive expedition papers, vaccinations, equipment and clothing.

# River Dolphins

- know about river scientists already Read what dolphins.
- the researcher hopes to gain in her ongoing new information Find out what

study.

- collected and posted to the website during Draw your own conclusions from the data the expeditions.
- Learn about the Pacaya-Samiria National Reserve and what a unique place it is.

# Daily Highlights

 Identify the quickly surfacing boto from tuxuci dolphins using QuickTime video.

- through extensive photos and QuickTime. Experience village life along the river
- View 360° of an Amazon tributary through QuickTime VR.
- Follow the adventures from start to finish through the daily log.

# Peru and Its People

- Find out about the history of Peru, its people and how their ancient culture influences their lives today.
- Meet the Peruvian crew of the research
- Read the myths of the river people.

# Taking Action

people can make involved in their local and global a difference by communities. • Learn how becoming



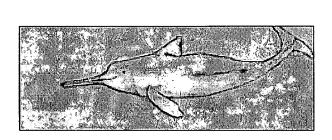
Take action and initiate change in your local community using the provided

# 484

# Come join us.

ers t. #2 CA 94118

Virtual Explorers 109 Clement St. #2 San Francisco, CA 94118



Virtual Explorers' initial trip in August of 1999

Join us as we learn about

Amazon river dolphins.

with researcher Tamara McGuire aided in a conservation effort and study of the elusive

Amazon river dolphins. Archived data, photo-

graphs and video are currently available to

students and teachers on the website.

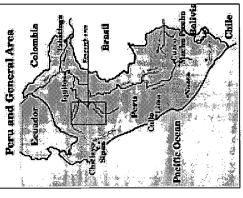
November 13-24, 2000. Once again, the team

A second expedition is planned for

will daily post research, travel updates and

photos live via satellite phone.

# Meanwhile, Tamara is continuing her dolphin research in Peru through the EarthWatch Institute. Her data, research findings, and journal entries will continue to be posted on



... as we explore

the world

# www.virtualexplorers.org

the website.

# www.virtualexplorers.org

Educators using technology to explore, discover, and share the world with students and teachers everywhere.



# Van Walleghan, Pam

<u>Unity in Community: Urbana Middle School - University of Illinois</u> <u>Original Author Submissions</u>

# Wagner, Hazel

Starship School: Creating productive, safe, family-oriented educational communities Original Author Submissions

# Wall, Mary

Quality in Distance Education Courses: A C.A.S.E. Study Original Author Submissions

# Walts, Jennifer

Wired for Success: A Cross-Curricular Collaboration Original Author Submissions

# Warlick, David

ClassWeb: Cultivating the Internet for Learning

Finding it on the Net

Teacher-Crafted Educational Web Environments: ClassWebs (pdf format)

Finding it on the Net: Being a Digital Detective (pdf format)

Original Author Submissions

# Webb-Upham, Michelle

**Technomaniacs** 

Original Author Submissions

# Weller, B. Jean

<u>Agenda</u>

**Evaluation Checklist for Internet Projects** 

Resources Checklist

Original Author Submissions

# Wininger, Denaya

<u>Creating Virtual Tours With QuickTime Virtual Reality</u>
<u>Creating Virtual Tours With QuickTime Virtual Reality: List of Resources</u>
Original Author Submissions

# Wissick, Cheryl

Developing multimedia tools to support functional and community training



NECC 2000 Sessions Handouts Index U-Z

QuickStarts: Web Toolboxes to Support Technology Integration

**Original Author Submissions** 

# Woytonik, Marlene

<u>Little Village to Global Village: Chicago, Illinois</u> Original Author Submissions

# Yohe, Paula

<u>Technology Creates Enthusiasm For Reading! (pdf format)</u>
<u>Original Author Submissions</u>

# Zaorski, Agnes Patterson

Videoconferenced POW-WOWs With Native American Keypals: Online Culture Sharing

WOW-KITE Keypals & Videoconferencingpals

Keypals Correspondence Template

WOW-KITE Videoconferencingpals Lesson Plan

Original Author Submissions



# Unity in Community

Urbana Middle School - University of Illinois

# 1998 Apple Education

<a href="http://www.cmi.k12.il.us/Urbana/projects/apple/index.html">http://www.cmi.k12.il.us/Urbana/projects/apple/index.html</a>

The "Unity in Community" project is a collaboration between the College of Education at the University of Illinois at Urbana-Champaign and Urbana Middle School. The goal is to use service learning and computer technology to create a student centered, project based curriculum. Students, teachers, and pre-service teachers will: (a) move the nexus of learning from the classroom to the community; (b) act as agents of positive change in the community; (c) use technology as the integral connection bet ween all phases of the program; and (d) create a web based clearinghouse of service opportunities in the community.

# **Service Learning**

Service -- Students provide valuable services to their community; and

Learning -- Students reflect on that experience in structured ways that enhance their learning.

# Some key elements:

- Young people themselves are involved in planning an jd leading the effort
- They are involved in important work that makes a difference for the community, the agency, and the young people themselves
- Their service experiences contribute to and are enhanced by their academic learning and personal growth

For more information about service learning, contact:

The Close-Up Foundation < <a href="http://www.closeup.org/servlern.htm">http://www.closeup.org/servlern.htm</a>

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# Starship School

Creating productive, safe, family-oriented educational communities

Hazel Wagner, Ph.D.

5/26/2000

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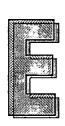
# **Quality in Distance Education Courses:** A C.A.S.E. Study

Dr. Mary Wall, Dean of Academic Computing and Distance Education wall@atlantic.edu

Dr. Joyce Grohman, Dean of Instruction Grohman@atlantic.edu

Atlantic Cape Community College Mays Landing, NJ <a href="http://www.atlantic.edu">http://www.atlantic.edu</a>

G	Collaboration  · Faculty to faculty  · Faculty to student  · Student to student  · College to college	Faculty mentoring Collaborative assignments such as: Debates Group work Discussions One-day workshops on online teaching
	Assessment     Academic integrity responsibility of the academic department     Quantitative assessment     Qualitative assessment	Types of quantitative assessment
	Student Support	Admissions:  Online admissions Dean of Students: Online registration Online advisement Online counseling Dean of Instructional Support Placement tests Proctoring tests LibraryDean of AC & DE Technology support Contact person for online students



# **Encouragement and Support of Faculty**

- · Before courses are put online
- · While teaching online

Before putting courses online:

- · Instructional technologists
- · Software such as WebCT and FirstClass

While teaching online:

- · Class size limit of 20
- · First time classes not more than 15
- · Clerical help

# Click to open author's original document.



# Wired for Success: A Cross-Curricular Collaboration

Presented by:

Dr. Sharon Joiner, Media/Technology Director sjoiner@infoave.net

Liberty County School System County Technology Office Lewis Frasier Middle School 910 Long Frasier Street Hinesville, GA 31313

Jennifer Walts, Media Specialist jwalts@liberty.k12.ga.us Regina Baker, Fourth Grade Teacher rbaker@liberty.k12.ga.us Cathy Lane, Second Grade Teacher clane@liberty.k12.ga.us

Liberty County School System Taylors Creek Elementary School 378 Airport Road Hinesville, GA 31313

# Our Research: "Why bother?"

Information literacy is here to stay. National Education Technology Standards have been established They can be seen at:

http://www.iste.org

International Society for Technology in Education

The proposed technology QCCs are at <a href="http://www.glc.k12.ga.us">http://www.glc.k12.ga.us</a> Georgia Learning Connections

Research studies have proven that incorporating technology into the curriculum helps teachers shift education from:

- 1. linear to non-linear
- 2. instruction to construction
- 3. teacher-centered to student-centered



Wired for Success: A Cross-Curricular Collaboration

- 4. knowing the answer to finding the answer
- 5. memorization to life-long learning
- 6. total group to customized instruction
- 7. ho-hum to fun

# Our Timeline: "No, it didn't happen overnight!"

1994: Model Technology Grant

1995: The "Dream Big" five-year technology plan.

1996: Farallon Grant provides Internet connectivity throughout the building.

1997: The E.L.I.T.E. (Enriching Learning through Implementing a Technologically-rich Environment) project was born. This project has moved Taylors Creek forward in our efforts to seamlessly infuse technology into all areas of instruction.

1999: Vanguard classrooms with trained teachers have served as model technology environments. We are better able to use what we have and to perceive technology as a tool.

# Our Collaboration: "You take the high road, I'll take the low road, but we'll get there faster together!"

The role of the teacher
The role of the media specialist
The role of the technology specialist

# Our Ideas: "Yes, two brains ARE better than one."

Planning and collaboration are cornerstones of success. Technology can fit into all areas of the curriculum. The key is to write the lesson first and then fit the technology into those places where it enhances the instructional design. Technology is NOT always the best way to go, but in many instances it will "Bring Learning to Life!"

# Our Proof: "A picture is worth a thousand words. A video is worth a billion."

This is technology in action. The following samples will help you remember all the exciting, yet simple, ideas you have seen and heard about in the session.

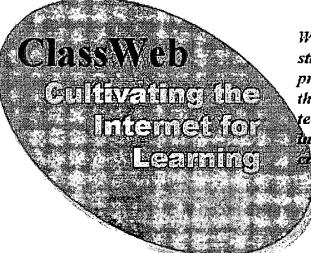
# Notes:



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We are moving "from preparing students for jobs we know.....to preparing students to solve problems they have never seen, using technologies that have not been areated, in jobs that have not been areated."

- Ian Jukes & Ted McCain David Thornburg Center



# David F. Wartick

Technology Educator & Author Raleigh, North Carolina

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www.landmark-project.com

Presented by David F. Warlick

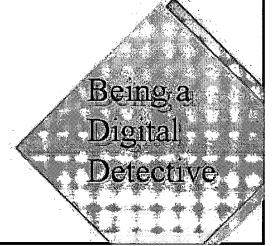
18 Year Technology Educator & Author Raleigh, North Carolina

david@landmark-project.com 919-571-3292



We are moving "from preparing" students for jobs we know.....to preparing students to solve problems they have never seen, using technologies that have not been invented, in jobs that have not been created."

> - Inn Jukes & Ted McCain David Thornburg Center



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# Teacher-Crafted **Educational Web Environments**

# ClassWebs

By David Warlick August 17, 1999

## **Problems**

What is the Internet's place in K-12 education? This question is often asked and often answered by school administrators, teachers, parents, and government officials. The question comes from the needs to finance the infrastructure that pipes the Internet into classrooms, media centers, and computer labs; the cost of maintaining that infrastructure; and the need to help educators learn to use and utilize the technology.

The answer varies depending on the media's latest twist, the grade level being addressed, and the level of knowledge, experience, and the level of imagination of the person considering these questions. It is essential for anyone who attempts to answer this question to understand the puzzle into which we are trying to fit this brand new technology.

First of all, our teachers are managing classrooms of 20 to 30 (and sometime more) students, each an individual with unique experiences, intellectual strengths and weaknesses, and styles of learning. Teachers are charged with assuring that each student exits the classroom at the end of the year with specific skills and knowledge as described by state or local standards and capable of applying those skills and knowledge in real world situations. Increasingly, teachers are also being asked to prepare students to take high stakes tests, which determines the school's ranking, teacher pay bonuses, or whether the state takes over the school.

With this much being asked of our teachers, the puzzle that makes up their classroom leaves little room for broad nebulous technologies no matter how impressive and global they are. This is especially true when the technology also presents the teacher with a new set of problems and challenges to address, including:

- Evaluating information from the Internet
- Supervising student use of the Internet to protect them from offensive or otherwise inappropriate information
- Protecting each student's identity on the Internet
- Precious time that is often wasted surfing the net for information
- Dealing with brand new plagiarism and copyright issues.

# **Classroom Web Sites**

In order for the Internet to fit positively and productively in the busy and over stressed classroom, it must be reshaped to fit in where it is needed. It must be molded and packaged to meet the needs of the students, the demands of the curriculum and the instructional style of the teacher. If a teacher can shape the Internet to meet specific needs, then it can become a mortar that can hold together those puzzle pieces, making a seamless learning environment. A tall order, admittedly.

It is almost rare to find a school district or even school without a web site. Nearly half of the workshops I have been asked to teach during the past four years have been for teachers and school administrators who want to build a web site for their school institution. Class web sites designed for students to use have been slower to appear, the rare ones created by a few techno-enthusiastic teachers. There are several reasons why Class web sites have been slower to appear:

- Few teachers have the skills to create and maintain a class web site.
- Few school districts provide web space for class web sites.



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- The class web site, when designed for students use, does not easily fit into the model of
  most institutional sites, making it more difficult to visualize what it might look like or how it
  might be used.
- The potentials benefits for creating effective learning environments have not been openly or thoroughly explored.
- To many students do not have access to the Internet at home in order to take advantage of class web sites.

Perhaps the last issue in the list above should be addressed first. Assuring equitable access to technology is a vital concern for educators and for society. However, a question we as educators must start asking is, when is the access sufficient that we can start relying on the Internet outside of the school and school day for teaching and learning?

In the 50s and 60s many homes had their own encyclopedias, but certainly not all homes. Students were still expected to conduct outside research regardless of their access to book. If you didn't have the resources at home for your research, then you were expected to go to the public library, or you arrived at school early or stayed late to use the school's library.

Here in Raleigh, North Carolina, every forth grade teacher in the city assigns their students to do a special project on one of North Carolina's lighthouses. The assignment is made at pretty much the same time every year. I can attest to the fact that there are not enough books in this city about lighthouses to go around to every forth grader in Wake County. However, with the emergence of web sites about this state's lighthouses, access has become much greater, and probably more equitable, regardless of who has computers at home.

There is much said and discussed today about distance learning – using computers and the Web to span distances between the teacher and students. However, there are also distances within the classroom to be covered, sometimes vast distances between student and curriculum. Teacher designed and constructed web sites may provide a way of spanning those distances by aligning selected and linked web resources, with powerful collaborative tools, and with standard courses of study.

Many teachers are still confounded by what exactly their students should be doing at their Intermetconnect classroom and lab computers. They know and use the World Wide Web and e-mail, but have not moved beyond think of the Net in they classrooms for anything other than a fancy encyclopedia. A teacher-constructed class web site can give students a place to start that is designed to send them to specific Internet resources within the context of the class goals and the real world application of the available knowledge and skills. This context would take the form of text, images, and other media that is embedded in the web page and wrapped around the information that they are accessing.

Assuming agreement with these conclusions, the time has come where educators can start constructing learning environments for their students through classroom web sites.

# What is a ClassWeb?

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A ClassWeb is a web page or web site constructed by a teacher (or other educator) to help his or her students learn specific curriculum content and skills. ClassWeb can be extremely flexible in design and construction, but they should:

- Utilize the unique qualities of the Internet -- rich information resources, collaboration, contributive expression,
- Proactively point the student toward educationally appropriate Internet resources,
- Provide for workspace for students to conduct their work, preferably interactive space.
- Provide a context for what the student is learning,
- Be constructed more easily and in less time than it takes to prepare a paper work sheet.

There are three aspects of using the Internet that are especially suited to help teachers teach and students learn.

- · Rich & Interactive Information Resources
- Collaboration



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### Rich & Interactive Information Resources

The Internet represents a vast amount of information on nearly any topic imaginable, and probably some topics that you and I probably wouldn't imagine. This vastness of information is part of the problem faces teachers as they try to integrate the Net into their curriculum. It can take students precious time to find the resources that they need, time that is not necessarily productive and is certainly inefficient.

A teacher constructed ClassWeb can help make the student's time on the Internet more efficient and productive by providing links to specific web resources identified, evaluated, and selected by the teacher. If a goal of the assignment is for students to conduct an Internet search, then links can be provided to the appropriate search engines and tips embedded in the page that helps the student develop search strategies that will end up with the desired outcome.

In conclusion, providing students with links to specific Internet resources through a teacherconstructed ClassWebs affords these advantages:

- Saves valuable time for the student and teacher.
- Dramatically decreases the chance that students will uncover offensive, unhealthy, or otherwise inappropriate web pages.
- Provides students access to web pages that have been previewed and selected by the teacher for specific instructional objectives
- Allows the teacher to logically sequence the links based on the instructional objectives.
- Perhaps the most important benefit of teacher-designed web link pages is the fact that the
  teacher can provide a context for the web resources. The hyperlinks can be preceded and
  followed by text, images, and other media that packages the web resources specifically for
  the instructional objectives of the activity.

## Collaboration

If you use the Internet, then you collaborate. It may be through e-mail, newsgroups, discussion forums, chat rooms, or other collaborative tools, but one of the most important things that people do on the Net, it communicate with other people. With ClassWebs, teachers can create web pages that either link to collaborative tools or embed the tools directly into the page. In the same way that a teacher might have students gather into small groups for cooperative leaming activities, the teacher might gather students through a chat room or message board to work together on an activity.

In very much the same way that the web links have been wrapped in context, the students' collaborative work space would also be surrounded by texts, images, and other media that connects the activity to the curricular objectives and to real world applications. In exactly the same way that teachers can surround web links with context, they can also assign students to collaborate over the Internet within the context of curriculum objectives.

Participating in online collaborative activities has several advantages over face-to-face collaborations.

- It is difficult to measure student's participation in face-to-face discussions. Online
  discussions can be easily measured because the entire discussion is archived. Both the
  quality and the quantity of the participation can be measured and graded. The teacher
  might say that one original article and two responses to other articles will eam a "C", two
  original articles and three responses will eam a "B", etc.
- Since students have time to reflect and craft their responses, shy or otherwise reluctant students are more likely to participate with more confidence.
- Perhaps the most important benefit of online discussion is the fact that students can reflect
  on the information before sharing their perspectives. They can also craft their responses

3



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Warlick, David. "Raw Materials for the Mind: Teaching & Learning in Information & Technology Rich Schools." The Landmark Project. 1999.

using word processing features. In processing their ideas through written texts, students can become more fluent in the concepts than keeping up with an oral collaboration.

## Self-Expression

One of the earliest lessons that we learned about students using e-mail was that they write better when writing to an authentic audience. This might have been a keypal, or a distant classroom, or increasingly broad audiences through student-created web pages. ClassWebs can facilitate opportunities for students to express themselves in a contributive way by providing venues for writing and even uploading other types of files such as art work, maps, diagrams, and other media.

## **ClassWebs**

ClassWebs are web sites created by teachers for their students. They create virtual learning spaces for students that provide access to selected information, encourage collaboration with peers and experts, and include opportunities for students to express their knowledge and experience to authentic audiences.

ClassWebs are unlike paper based learning activities (work sheets). They leverage technical and application aspects of computers and the Internet that are not possible on paper, such as virtually limitless access to information, collaborative working space, and virtual access to the activity by the teacher.

ClassWebs are unlike traditional web-based activities. A growing virtual library of dynamic and effective educational web sites is appearing on the Internet. However, these sites are developed by people who do not know your students, the scope and sequence of your classroom, nor your teaching style. ClassWebs remember that teachers are the instructional leaders of our classrooms, and empowers them to fully utilize the Internet for their students.

ClassWebs are unlike traditional interactive classroom activities. The Internet transcends space and time. Students can participate in the activity within the same room at the same time, or they can work together from their own homes or other locations, benefiting from ongoing monitoring and support from their teacher(s).

## An Example

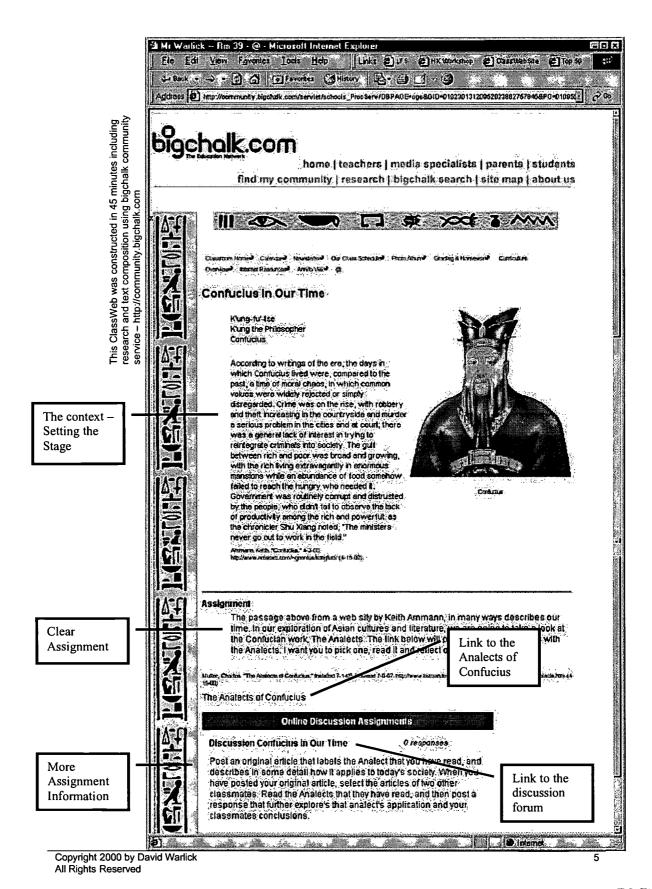
A seventh grade social studies teacher is bringing closure to a unit on China. He has introduced Confucius on several occasions during the unit. As a final activity, he assigns students to scan some of the *Analects* of Confucius, which are saying either directly attributed to him or to others who taught Confucian philosophy after his death. Each student is asked to select one or more of the Analects and then write a short essay (one or two paragraphs) that describes how the idea relates to today's society.

As a ClassWeb, the assignment would take the form of a web page, which begins with an introduction that sets the context of the students' work. Then clear instructions are included in appropriate places on the page. The web page also links to a web site(s) that include the information being considered, the Analects of Confucius. Finally, a work space is provided. In this case, students are asked to use a discussion forum or message board. They are each asked to post at least one original articles describing how their Analect applies to contemporary society. Finally, students are asked to respond to at least two articles posted by classmates, expanding on their ideas. On the next page is an image of how such a ClassWeb might look.





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## ClassWeb Techniques

### Web Building

Many teachers today have learned to build web pages. New HTML editing tools are available and have been purchased by schools enabling teachers with the same tools used by professional web masters.

However, teachers are not full time web masters. They are full time teachers. Therefore, one of the foundations of ClassWebs is that they should be easy to build and can be constructed in very little time, less time than it takes to create a paper worksheet.

In the last year, a number of services have appears commonly called communities. These are web sites that enable non-professional web masters to create web pages easily and quickly, the goal being to create a place for members to come and access information. Since many of these community services also include collaborative tools, community members can also interact with each other.

These and other community services make idea tools for creating classroom web sites for students (and parents and other classroom stakeholders) and also ClassWebs as instructional tools for students.

bigchalk.com http://www.bigchalk.com

SchoolCity http://www.schoolcity.com

LightSpan http://www.lightspan.com

HighWire http://www.highwire.com

Web Links

One of the most powerful features of ClassWebs is the ability to provide for students access to a wealth of diverse information. Many of the above mentioned community tools offer the ability to create lists of links for students. However, to avail one of the most important features of ClassWebs, wrapping content with context, teachers may need to know a little HTML coding to place links to web sites in specific spots on the page. Here is how you can do this.

- You need two pieces of information in order to create a hyperlink: a) the text (or image) that the student will click to access the web page, b) the URL or web address of the page to be accessed.
- The link text (to be clicked) is entered into the web page along with context building materials that directs students in how they use the linked information.
- The following HTML code is entered to the left of the link text, where the URL of the accessed page replaces URL

<a href="url">

4. The following HTML code is entered to the right of the link text.

</a>

The hyperlink will look like this:

<a href="URL">Link Text</a>



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### Web Forms

In the late summer this year, a web site and mailing list were established for the further discussion and exploration of ClassWebs. The mailing list now involves nearly three-hundred educators from 19 different countries, and discusses available Internet Tools, staff development necessary to help teachers learn to build class webs, essential skills, and examples.

The ClassWeb support site provides links to tools on the Internet that can be incorporated into ClassWebs. They include:

☐ Response-O-Matic – <a href="http://www.response-o-matic.com">http://www.response-o-matic.com</a>

A free web service that allows you to create a web fill-out form where students can answer questions or post writings and have the information e-mailed to the teacher, to a panel of experts, or to a mailing list.

☐ Server.Com – <a href="http://www.server.com">http://www.server.com</a>

This site creates online threaded discussion forums where students can discuss with each other online issues that they might normally discuss in class. However, with the discussion forum they can reflect and craft their discussion ideas and the teacher (and students) have an archive of the entire discussion

☐ Crzy Chat - http://www.crzvchat.com/

This web site produces code that can be pasted into your ClassWeb page to produce a secure chat room on your web page.

Egroups – <a href="http://www.egroups.com/">http://www.egroups.com/</a>

This site facilitates mailing lists, chat rooms, online calendars, and many other collaborative tool.

All of these are free to teachers and there are many others on the ClassWeb support site. Also on the site are access to the mailing list archive, links to various articles and tutorials, links to example ClassWebs, and much more.

One of the goals of the ClassWeb support site and mailing list is to find ways to make the creation of ClassWebs more accessible to all teachers. One project that we are engaged in is a tool that will allow teachers to create rubrics that can be displayed on web pages. It consists of a web form that the teacher (or student) completes describing the objectives of the work and the performance indicators. After completing the form, the tool constructs a web page that displays the rubric.

The group also plans to create a similar tool that will allow a teachers to complete a form to construct an entire ClassWeb. The goal is to make ClassWebs easier for a teacher to construct than a paper work sheet.

# Conclusion

ClassWebs are about solving problems. They overcome the challenges of the Internet, allow teachers to shape the technology to their specific needs, and require the least amount of technical training.

Perhaps the greatest challenge facing teachers today is the lack of time that we have to do our jobs. Creating effective learning experiences for our students takes a great deal of time, for more than teachers are paid for. Those who succeed, do it on their own time at the expense of their families and even their health. One thing that we as educators need to be doing is figuring out just what students learn better in the traditional classroom, and what they learn better at computers. It is

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possible that at some point in the future, perhaps near future, we can restructure our schools so that students spend one three or four hours in traditional classrooms under the instructional supervision of their teachers, and three or four hours a day at computers or engaged in other self-directed and less supervised learning activities – while professional teachers are planning, collaborating, designing and building, gaining skills, and inventing educational environments.

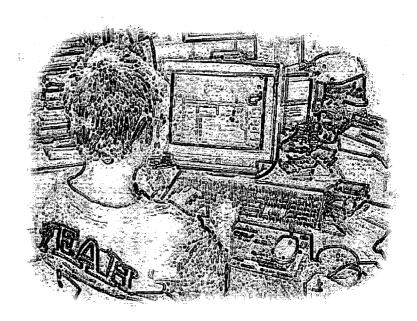
ClassWebs could be a healthy movement in that direction.



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# **Handouts for**

Finding it On the Net: Being a Digital Detective



**By David Warlick** 

Raleigh, North Carolina USA david@landmark-project.com 919-571-3292 http://www.landmark-project.com/dfw

Excerpted from Raw Materials for the Mind: Teaching & Learning in Information & Technology Rich Schools

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# **Finding People**

# **Finding Experts**

There are a number of services on the Internet that connect students and teachers with the appropriate expert. Here are just a few:

Service	URL		
New Jersey Network			
Infrastructure in			
Education's			
Ask an Expert Page	http://njnie.dl.stevens-tech.edu/curriculum/aska.html		
Pitsco's Ask an Expet			
Page	http://www.askanexpert.com/askanexpert/cat/		
The Mad Scientist			
Network	http://medinfo.wustl.edu/~ysp/MSN/		
The Franklin Institutes'			
Ask a Scientist Page	http://sln.fi.edu:80/tfi/publications/askexprt.html		

# Strategies for Locating Experts in Academia

If you are looking for an expert in a particular area of interest, such as the migration of Monarch butterflies, and you do not count an entamologist among your friends, your detective work begins. A good first place to start may be the academic community. Authority is an important advantage of finding people in this way. Their universities have hired them because they are experts.

 We will begin with a university in Mississippi, because we know that Monarchs travel through that state. First of all, we go to Mississippi's state government home page to find a listing of universities there.

The URLs for all state government resource pages are basically the same:

www.state.ms.us

...where the  $\emph{ms}$  is the abbreviation for the state. For California, it would be

### www.state.ca.us

- Here I find a link to Mississippi State University. From the Mississippi State University home page I
  click Academics and find a link to the Department of Entomology. Many university web pages use the
  term Academics to point toward their individual colleges and departments.
- After I get the page for the Entomology Department, I click on faculty where I found experts on insect morphology, insect systematics, and insect population. Each of these faculty members has a personal home page.
- Clicking on one of the scientists we see his picture, a list of his publications, and his e-mail address.



2

# **Finding Communities**

The Internet has become a very important tool for scientists and other experts, especially for use in communicating with each other about their particular fields of study. In many cases, the Internet has become an online and extended conference, where specialists can discuss with large numbers of fellow experts the current issues about their areas of interest. One Internet tool that specialists frequently use for establishing these online discussion forums is the Internet mailing list. If we could join a mailing list that is used by experts in our area of interest, then we can tap into or eavesdrop on their conversations.

# How do you find Internet Mailing Lists?

An excellent way to learn about mailing lists is through other mailing lists. One of the best sources for this and other types of Internet information is Net-Happenings, a very old mailing list that is moderated by Gleason Sackman in Fargo, North Dakota. To subscribe to this list, address an e-mail message to:

listserv@cs.wisc.edu

In the body of the message, type:

### What is an Internet Mailing List?

An Internet mailing list is very similar to the postal variety. It is a list of addresses, e-mail addresses, to which messages can be sent in a bulk-mailing fashion. Internet mailing lists have one very important advantage over postal mailing lists. Anyone, who is on the list, can send messages to the entire list of members. Any member of the list can send announcements, solicit help, report successes and less successful projects, and open discussions.

To join an Internet mailing list, you only need two pieces of information:

- 1. The name of the list, List Name.
- 2. The e-mail address of the computer that maintains the list, **List Address**.

Once you have this information, you simply address an e-mail message to the list address, and type in the subject of the message:

Subscribe < list name > < your name >

Then send the message. After a moment you will receive an automatic e-mail message from the computer welcoming you to the list and explaining some of the guidelines for participating in the discussions.

Subscribe NET-HAPPENINGS <your name>

There are also a number of databases of mailing lists available on the Internet. They include.

Directory Name	URL
Tile Net	http://tile.net/
The Directory of	http://n2h2.com/KOVACS/
Scholarly E-Lists	
Liszt Directory of Email	http://www.liszt.com/
Discussion Groups	<u> </u>
Publicly Accessible	http://www.neosoft.com/internet/paml/
Mailing lists	
Search the List of Lists	http://catalog.com/vivian/interest-group-search.html

# **Finding Peers**

Teachers can usually find peer teachers to collaborate with over education mailing lists. Much of the time you can use these same contacts to find student collaborators.

### Strategies for Finding Peers on the Internet

However, if you want to locate a class in Italy with whom you want your students to correspond about the monuments of Rome, then the mailing list may not do the trick. This is easier than you might think. To find our Roman class, we can use Web66, a very old and valuable web site.

http://web66.umn.edu/



3

- From the Web66 home page we click on International Registry of Schools on the Web.
- The Registry of Schools is a database of schools from around the world who have registered their school website so that other people can find it. There are a number of other registries, but Web66 is the oldest and biggest.
- A map of the United States appears. We click the word Europe so that we can get the Europe registry page.
- When the map of Europe appears, we click the outline of Italy and receive a list of elementary and secondary schools with websites.
- Our science teacher will then view a number of the websites, looking for some that feature students work, an

Australia Canada Europe Japan USA World

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Finand

Notinety

Formand

Linked Nether Lave

Formand

Coch Coch Chemic

Freite Strict

Freite Strict

Romand

Romand

Tiekey

Mine

indicator that teachers are involved in the implementation of the site and not a parent or other outside agency. Send our introductory e-mail to the teachers or webmaster of the Italian site.

When searching for Italian schools through Web66, I received a list of 22 elementary and 100 secondary schools.

# **Finding Digital Resources**

# **Topic Oriented Directories**

Using topic-oriented directories is very much like browsing a library. You look for the shelves that hold books about the subject for which you are looking. Then you walk along those shelves looking for the book(s) on your specific topic of interest.

Topic-oriented directories organize Internet resources logically, by subject. They organize the resources in a hierarchical structure providing a list of general subjects, each subject leading to a list of topics within that subject, each topic leading to sub-topics, and usually to more subtopics. Eventually, you are presented with a list of Internet resources or websites, each related to the final subtopic that you selected.

# **Topic Oriented Directories**

Service	URL	
Yahoo	http://www.yahoo.com	the state of the s
Yahooligans	-	
Yahoo for children	http://www.yahooligans.com	
Galaxy	http://galaxy.einet.net	
NewHoo	http://www.newhoo.com	
Netscape Netcenter	http://home.netscape.com	-
Internet Start	http://home.microsoft.com	
LookSmart	http://www.snap.com	
Snap	http://www.looksmart.com	
Àpali		
Spanish Languages Directory	http://www.apali.com/	
Native Search	· ·	
Directory of Native American web		

http://nativesearch.com

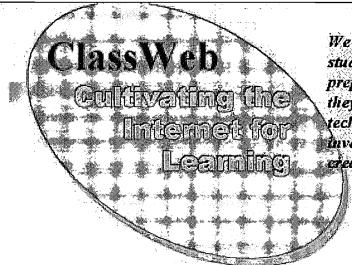


resources

# Click to open author's original document.







We are moving "from preparing students for jobs we know..... to preparing students to solve problems they have never seen, using technologies that have not been they have not been they

 Ian Jukes & Ted McCain David Thornburg Center

NECC DOWN ECTIVIS OF THE CROSSEDARS

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	<b>Education Related Directories</b>	
G.R.A.D.E.S.		
from Classroom Connect	http://www.classroom.net/Grades	
Kathy Schrock's Guide for	•	
Educators	http://www.capecod.net/schrockguide/	
Planet K-12	http://planetk-12.planetsearch.com/	
Blue Web'n	http://www.kn.pacbell.com/wired/bluewebn/ca	tegories.html

#### **Search Engines**

Search engines are the miracle of the Internet. These sophisticated tools seem to reach right into the global network, and scour its contents at your command. In reality, they do not work exactly in this way, although the true nature of search engines is no less fascinating.

		97
Search Engine	URL	
Alta Vista	http://www.altavista.digital.com	
Excite	http://www.excite.com	
HotBot	http://www.hotbot.com	
Infoseek	http://www.infoseek.com	
Lycos	http://www.lycos.com	
	rch Engines (Crawler style se	earch engines that work to
filter out adult ma	aterial)	earch engines that work to
filter out adult ma	aterial) http://www.ajkids.com/	earch engines that work to
filter out adult ma	aterial)	earch engines that work to
filter out adult management Ask Jeeves Disney Internet Guide	aterial) http://www.ajkids.com/	· She shell kill a looking to the shell kill a looking to
filter out adult ma Ask Jeeves Disney Internet Guide (DIG) Lycos SafetyNet	http://www.ajkids.com/ http://www.disney.com/dig/today/	safetynet.asp

#### The Language of Search Engines

DogPile

Highway 61

Search engines are your helpers. They are information assistants who aid you in finding the information that you need to solve a problem, answer a question, or make a decision. Like any other assistant, the degree to which they are able to help depends on the degree to which you are able to tell them what you want. Therefore, communicating with your search engine is a critical part of the search process.

http://www.dogpile.com

http://www.highway61.com

Search engines need to know what information you seek, and they need this information communicated in a logical way -- they are, after all, computers. The language that we traditionally use to talk with computer-based searching tools is called *boolean*, named after George Boole, a mathematician of the 19<sup>th</sup> century.

In Boolean Logic we use keywords to describe what words to look for when searching the index. We also use operators to describe the relationships between our keywords and the information that we need. The basic operators are AND, OR, and NOT.

Let's use an example to explore how we would use Boolean Logic to search for information on the Internet. We will look for information about Native Americans in the state of Ohio. In the table below we will explore several concepts involved in speaking Boolean and relate these concepts to our search.

Concept	Explanation	on/Example	ALER ANNALES AND
Keyword	A keyword is a word or term that we want the search engine to consider in looking for relevant information. In our example one world that would likely appear in a web page about Native Americans is <i>Indian</i> .		
	Example:	Indian	mencans is maian.



Concept	Explanation/Example	
OR .	In many cases, there may be a synonym	
	web page instead of the keyword we have	e already chosen. So we will want to
	expand the number of pages that the sea	arch engine sends us to include the ones
	using the synonym. In the case of our exa	ample, many web pages would likely
	use the term Native American, which is n	nore commonly used today than Indian.
	In this case we would use the operator, C	OR, to say that we want web pages with
	either the word Indian or the term Native	
	Example: Indian OR Nativ	re American
AND	Since we are looking for information about	ut Native Americans in the state of Ohio.
	then an additional keyword will be Ohio. V	
	we get to only those about Native Americ	
	terms must be present. Here is where we	•
		ve American AND Ohio
NOT	As we think through the information that v	
	there is a baseball team in Cleveland, Oh	
	filter out all web pages about the baseball	
	baseball, and connected it to our search	
	saying that the acceptable web page sho	
	it.	aid 1101 have the Reynold baseball in
		ve American AND Ohio NOT baseball
quotes	Just as we use commas, question marks	
quotes	communicate with people, we use specia	
	search engine. One example is the use of	
	our example, Native American is going to	
	search engine that could each appear an	
	communicate that these two words belon	
	quotes.	y together as a distilict phrase, we use
		ve American" AND Ohio NOT baseball
Parentheses	Each operator in a search expression de	
Parenmeses	•	elines a distinct keyword concept.
	Keyword 1 AND Keyword 2 Keyword 3 OR Keyword 4	
	Keyword 5 NOT Keyword 6	
	A keyword concept can consist of:	
	A single keyword or phrase	
	Two single keywords or phrases connect	
	Keyword concepts connected by an open	ator to other keyword concepts or single
	keywords or phrases.	
	Individual keyword concepts are marked	
	our example, the following are distinct key	yword concepts:
	Indian	
	(Indian OR "Native American")	
	((Indian OR "Native American") AND Oh	
	The final keyword concept, the one that in	ncludes all constituent keyword
	concepts is called our search expression	
	Example: ((Indian OR "Na	ative American") AND Ohio) NOT

Admittedly, Boolean Logic is not the simplest thing to understand or teach. However, it is a very effective way of communicating with search engines your information needs.

To make things easier for casual users, Internet search engines have developed alternatives to traditional Boolean Logic. One of the most common conventions is the use of pluses (+) and minuses (-), to indicate which terms must (+) and must not (-) be present in the returned documents. Each search engine has developed its own version of these searching conventions, each trying to improve upon these standards, and this evolution of the search language continues. None is perfect and you will find that finding information from the Internet is more a process than the click of a button.

Transfer of Parks And M	An Alternative Search Convention
Pluses (+)	Any keywords in your search expression that MUST appear in your
	target web page should be preceded by a plus symbol (+).
	If the keyword is a phrase, then it should be enclosed by quotes
	Example: +basketball +"Mike Jordan"



Minuses (-)	Any keyword that must NOT appear in your target web page should be preceded by a minus symbol (-).
•	As when using the plus symbol, if the keyword is a phrase, then it should be enclosed by quotes.
	Example: +basketball +"Mike Jordan" -Nike
Pipe ( )	The pipe character helps you to fine tune your search. Place and
This character is usually above the backslash (\)	pipe character between to search terms tells the search engine to search for the first term and then search for the second term within the first term's hits.
	Example: Internet/Web

#### **Net-Smarts**

Net-smarts is perhaps your most valuable tool in finding information on the Internet. It is a growing awareness of what is available on the Internet and how it works, and a growing sense of "where is the best first place to start?" As mentioned earlier, searching the Internet involves investigating an information environment, turning over stones, checking for fingerprints, examining strands of hair. It means having an idea of what you are looking for, and at the same time being open for the unexpected.

More than anything, being net-smart involves asking questions. Here are some questions that must be asked and considered when embarking on an information safari on the Internet.

- 1. What do you want to find?
- Will the information most likely be found in articles, company web pages, software, conferences, discussion groups, or people. The answer to this question helps you decide on a search strategy.
- 3. Why would someone publish this information on the Internet?
- 4. Who would publish this information on the Internet?
- 5. Who would host this information on the Internet?
- 6. What would a web page with the Information I seek look like?

Questions two through five would each help us in developing our search phrase.

7. Are you wanting to broaden your knowledge of a general topic or do you want more narrow, specific information?

Broad or general information is usually best found in topic-oriented directories. More information on more specific topics is best found with search engines.

#### The S.E.A.R.C.H. Process

Conducting effective searches of the Internet is rarely a matter of typing in a single keyword and being presented with the solution to your problem. It is much more frequently a series of searches, each revealing more clues about the information that is available, and where that information can be found.

Developing a search process can be difficult, because each person's process depends on their personal style of using information and the particular types of information that they typically need. However, there is a process that can be used as a springboard to the personal procedures that you develop with experience. The process is called S.E.A.R.C.H. It is an acronym for the process that has you **Start** with a small database search tool, **Edit** your search expression, **Advance** to a larger database search tool, **Refine** your search phrase, **Cycle** back and advance again, and finally, **Harvest** your information gems.

On the next page is a larger representation of the S.E.A.R.C.H. process



## **Search Strategy**

Search with a key term on Yahoo or another small	Notes:
index search tool.	
You start with a small index search tool for two reasons:	
<ol> <li>You will receive a limited and manageable number of hits.</li> <li>The hits that you get will be representative of what is available on the subject</li> </ol>	
Examine the hit pages collecting words that are common among the relevant hits and words that are common among the irrelevant hits.	
f Edit the search expression with terms gleaned from	
the initial search.	
Add words collected from the initial search, including words common among relevant and irrelevant pages. Construct a boolean search expression that effectively communicates the information that you seek.	
engines  Enter the edited search phrase into a larger index search tool. Examples are:  • Excite http://www.excite.com  • InfoSeek http://www.infoseek.com  • Alta Vista http://www.altavista.digital.com  • HotBot http://www.hotbot.com	
Refine the search expression  Explore the pages reported by the larger search engine and refine the expression even more, further defining the relevant hits, and filtering the irrelevant. Again, examine both good hits and bad hits.	
Cycle back and Advance again.	
Return to the advanced search engine that you used before or use another search engine.	
${f H}$ arvest the results	
Collect the needed information by printing, downloading, forwarding by e-mail or just reading.	



#### **Web Pages Worth Bookmarking**

Educational Web Directories Service Landmarks for Schools	Description  This website is dedicated to providing teachers with links to information raw materials with which they can create learning resources and their students can construct information products.  http://www.landmark-project.com/
	nup.//www.landmark-project.com/
Kathy Schrock's Guide for Educators	This is a rich and regularly updated list of links organized specifically for teachers.  http://school.discovery.com/schrockguide/sos.html
Education World	This is a long-standing and content rich site that whose history include the old Weekly Reader. The site includes lists of links organized by subject area. This site also includes articles written for and by teachers.  http://www.education-world.com
Blue Web'n	Another old resource with lots of annotated sites organized by content or by subject. The site also includes a very powerful search tool for finding sites at the subject area and grade level for you. A real time saver for busy teachers. http://www.kn.pacbell.com/wired/bluewebn/
Global SchoolNet Foundation	Recently purchased by Lightspan, Inc., the people at GSN probably know more about online instructional projects than anyone else. Their projects are among the best in the world, and their <i>Projects Registry</i> tool allow teachers from all over to develop and publish their project ideas for collaborators.  http://www.gsn.org
ThinkQuest	ThinkQuest is not just a project for students to create web pages, but it is also a library of more than a thousand web sites created explicitly to help people leam.  http://www.thinkquest.org/
Commercial & Public Sites Service	Description & URL
PBS Online	This website offers a wide variety of resources for teachers to be used in
	conjunction with PBS programming.  http://www.pbs.org/
	<u> </u>
Discovery Channel Online	Like PBS, this website offers materials and other opportunities to be used with their programming.
	http://www.discovery.com/
The History Channel	This site has a wealth of material. One of the most interesting resources is Great Speeches, an archive of recordings (Real Audio files) of great speeches of our century. The include Mahatma Gandhi, Jimmy Hoffa., LBJ, George Bernard Shaw, and Babe Ruth.
CNN Interactive	This rich website hold a large number of resources for teachers of just about any discipline. On valuable resource is the <i>Transcripts</i> service which stores the text transcripts for CNN programming over the past week or so.  http://cnn.com/TRANSCRIPTS/
	Video Archive is another useful service. It is a searchable database of video files (QuickTime). A search of biotechnology returned 76 clips.  http://cnn.com/video_vault/
	CNN offers another service that could be useful for teachers. Called Custom News, teachers can indicate the specific issues that they are interested in based on current and upcoming units of study, and CNN will build a custom page with links to current stories on those issues.



Educational Web Directories Service	Description http://cnn.com/CustomN	lews/
Earth Science Enterprise from NASA	This rich resources provides links to a wide variety of web sites falling under each of the following categories: air, water, land, life, sun.  http://www.hq.nasa.gov/office/ese/scie	
	Earth Science Enterprise also has an archive if images that can be used in learning materials.  http://www.hq.nasa.gov/office/ese/ga	allery/



### Click to open author's original document.





## **Technomaniacs**

Susan LaValley and Michelle Webb-Upham
A Short (Always Under Construction) List Of Recommended Software for K-3

#### Reading and Language Arts

Title	Publisher	Age Level
A to Zap	Sunburst	3-7
Arthur's Reading Race	Broderbund	4-7
Arthur's Teacher Trouble	Broderbund	6-10
The Amazing Writing Maching	Broderbund	5-10
The Cat in the Hat	Broderbund	3-7
Carmen San Diego Word Detective	Broderbund	7-12
Dr. Seuss's ABC	Broderbund	3-7
Easy Book	Sunburst	5-12
Green Eggs and Ham	Broderbund	4-7
Hyperstudio	Roger Wagner Publishing	6-adult
Imagination Espress Series	Edmark	5-13
Just Grandma and Me	Broderbund	3-7
Kid Pix Deluxe	Broderbund	4-10
Kid Works Deluxe	Davidson	4-8
Let's Go Read-Island	Edmark	4-6
Let's Go Read-Ocean	Edmark	6-8
Millie and Bailey's Schoolhouse Kindergarten	Edmark	4-7
My Personal Tutor	Microsoft **Windows only	3-6
Orly's Draw-a-Story	Broderbund	5-10
Ready to Read With Pooh	Disney Interactive	3-6
Stanley's Sticker Stories	Edmark	4-8
Thinking Things I, II	Edmark	4-8, 6-12

#### Math

Title	Publisher	Age Level
The Graph Club	Tom Snyder	5-12
Logical Journey of the Zoombinis	Broderbund	6-12
My Personal Tutor	Microsoft *Windows only	3-6
Preschool Apple Bundle Patterns/Geometry, Blocks Bugs in a Box, etc	Apple	4-7
Ready for Math With Pooh	Disney Interactive	4-7
Trudy's Time and Place House	Edmark	4-7
Wild West Math	Micrograms	7-10

#### Science and Social Studies

Title	Publisher	Age Level
Sammy's Science House	Edmark	4-7
Claris Works for Kids		4-10
Imagine Express Series	Edmark	7-Adult
Magic School Bus	Microsoft	6-10
Neighborhood Map Machine	Tom Snyder	5-12

#### Literature Links

Rosie's Walk - Pat Hutchins
Arthur Writes a Story-Marc Brown
Ten Black Dots - Donald Crew
I Can Write - Theo LeSieg
Chicka Chicka Boom Boom-Bill Martin Jr.
I See Patterns
Bugs In A Box - David A. Carter
Annos Counting Book - Mitsumasa Anno



#### **Software Resources**

Edmark 1-800-362-2890 <a href="https://www.edmark.com">www.edmark.com</a>
Apple <a href="https://www.apple.com">www.apple.com</a>
Tom Snyder 1-800-342-0236 <a href="https://www.teachtsp.com">www.teachtsp.com</a>
Broderbund 1-800-474-8840 <a href="https://www.broderbund.com/education">www.broderbund.com/education</a>
Davidson/Knowledge Adventure 1-800-545-7677 <a href="https://www.davd.com">www.davd.com</a>
Disney 1-800-900-9234

**Notes** 

Let's Go Read

Kid Works

Millie's Math House

Kid Pix

515

### Neighborhood Map Machine

### Claris Works for Kids



## Agenda

## Internet Project-Based Learning for the Classroom Teacher NECC 2000

B. Jean Weller and Kate Santhuff

- > Introduction
- Projects: What Are They?
- Types of Projects (Powerpoint)

Judi Harris' Virtual

**Architecture** 

WebQuests

Guided Browsing

**Hyperlinks** 

Checklist

- Share Your Treasures!
- Implementing Projects in the Classroom
- Creating Your Own Projects

Judi Harris' Guidelines

WebQuests

<u>Filamentality</u>

Questions?

Contact us!

Jean: jweller@montwell.com

Kate: kate@3rdWaveWeb.com

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## **Evaluation Checklist for Internet Projects**

Academic Goals:
Process-Oriented Goals:
Project Name: Site URL: Grade Level(s): Curriculum Tie-in: Time Frame:
➤ How often are we required to be online?One Time OnlyEverydayEvery few daysEvery weekEvery two weeksSporadic
➤ What level of support for linking our class with other classes is built in to the project? Link to others is part of projectNo link to others; need to recruit our own partners Not necessary for this project
➤ Do we know how to use all of the technology required? YesMostSomeNone
➤ Do we have good support for the technology needed?YesNo
➤ How much extra preparation of the students needs to be done before we start (either academics or skills)?We've already done it1 or 2 lessonsA weekMore than a week
➤ What types of activities will students do?Whole group workSmall group workIndividual workComputer intensiveWeb intensive

## **Resources Checklist**

(Adapted from NickNacks, <a href="http://home.talkcity.com/AcademyDr/nicknacks/">http://home.talkcity.com/AcademyDr/nicknacks/</a>)

#### The Basics

Computer/Model	
RAM size (mb/gig)	
Hard Drive Size (mb/gig)	
Processor Speed (mhz)	
Internet Connection	Modem/Dial-up   School Network Server
E-mail Software	
Compression Software	
A/V Ready?	

## Software (List titles and versions)

TEXT: Word Processing	
GRAPHICS:	
Draw/Paint Software	
Imaging Software	
Digital Camera and Software	
Graphing/Works Software	
Scanner and Software	
SPREADSHEETS: Software	
SPECIAL:	
Free Players (i.e., Acrobat)	
Page Layout/Desktop Publishing	
Presentation Software	
Movie/Animation Software	
SOUNDS:	
Digital Microphone	(Internal: YES NO)

•	
Music Player Software	
Multimedia Player (i.e., Quicktime)	
Live Web Player	
WWW:	
HTML Editor	
URL for Posting	
FTP Server (directory)	
FTP Software	
CONFERENCING:	
Video Camera	
Digitizer Software	
IRC Software	
Video Software	
Other:	
CROSS-PLATFORM:	
MacLink Plus/PC Exchange	
JPEG/GIF Conversion Software	
Sound Conversion Software	

## Creating Virtual Tours With QuickTime Virtual Reality

NECC 2000 Atlanta, Georgia



## **Agenda**

- 1:30 2:00
- Introduction
- Statement of objective
- Overview of suggested requirements
- Equipment needs and options
- 2:00 2:45
- Practice gathering pictures
- Compiling VR Panoramas
- 2:45 3:30
- Practice gathering pictures
- Compiling VR Objects
- 3:30 4:00
- Creating VR Scenes
- 4:00 4:30
- Follow Up Questions
- Contact Information

#### **System Requirements**

#### Minimum system configuration

- · Mac OS-based computer with a Power PC processor
- · 16 MB RAM available for the QuickTime VR Authoring application program
- · 40 MB of space available on your hard disk
- · CD-ROM drive



### System requirements for playing QTVR media

#### Mac OS

- · QuickTime extension version 2.5 or later
- · QuickTime VR extension version 2.0.1 or later
- · MoviePlayer version 2.5 or SimpleText

#### Windows

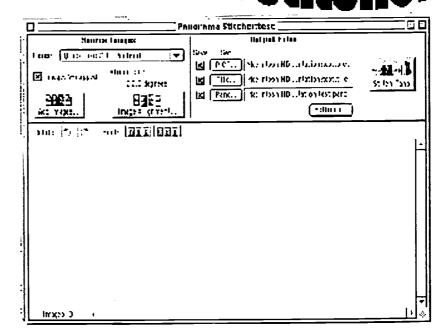
- · 486 or Pentium processor
- · QuickTime for Windows version 3.0 or later
- · QuickTime VR components version 2.1 or later
- · MoviePlayer version 3.0 or later

#### Over the Internet

· If you are playing QTVR media over the internet, you need a World Wide Web browser with the QuickTime plug-in version 2.0 or later installed

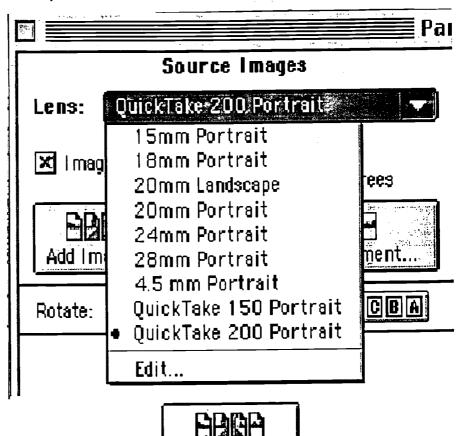
## Panorama Stitcher

- · Open software
- · Select New from the File menu, then select Panorama Stitcher
- · Type a name for your Panorama Stitcher document
- · Select Save

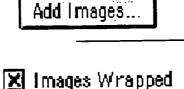


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· Select your lens in the Lens pop-up menu

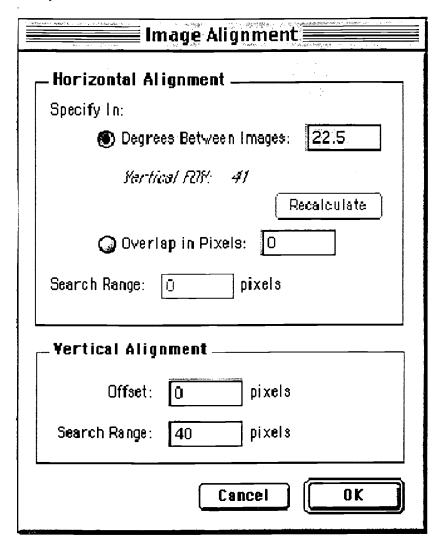


- · Click Add Images
- · Select the images you want to use (PICT, TIFF, JPEG, GIF)
- · Click to select the wrap images box (360 degrees)
- · Click Image Alignment
- · Enter appropriate angle (16 pictures = 22.5 degrees) and Click OK

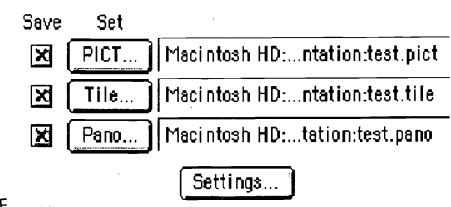




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- · Click the appropriate arrow to rotate your pictures
- · Click the appropriate Sort button to change the order of your images
- · Check or UN-Check which files you want to save/not save (PICT, Tile, Pano)
- · Change the name and/or location of your file/s
- · Click settings



525

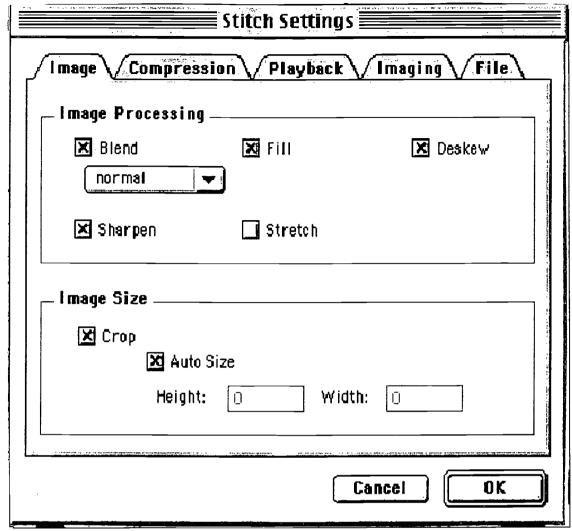
**Output Files** 

ABC CBA

Rotate:

Sort:

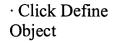
- · Click Image tab: Blend, Fill, Deskew, Sharpen, Stretch, Crop, Auto Size
- · Click Compression tab: Auto, Settings
- · Click Playback tab: View Size, Pan Range, Default Tilt, Tilt Range, Default Zoom
- · Click Imaging tab: Static Quality and Correction, Motion Quality and Correction
- · Click File tab: Flattening, Copyright
- · Click OK
- · Click Stitch Pano

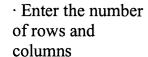


# Object Maker

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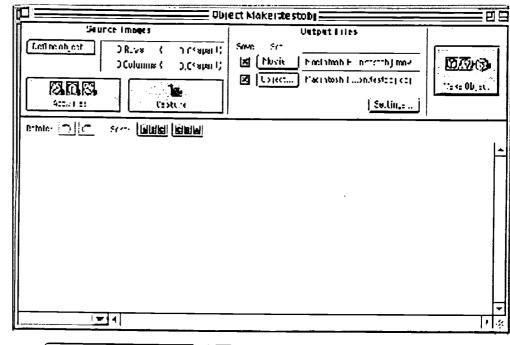
- · Open software
- · Select New from the File menu, then select Object Maker
- · Type a name for your Object Maker document
- · Select Save
- · Object Maker window appears





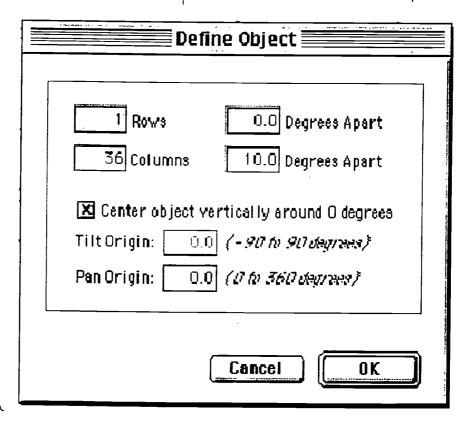
BEST COPY AVAILABLE

· Click Add Files · Select the images you want to use (PICT, TIFF, JPEG, GIF)



Define object... 0 Rows ( 0.0° apart)

O Columns ( 0.0° apart)





- · Click the appropriate arrow to rotate your pictures
- · Click the appropriate Sort button to change the order of your images
- · Check or UN-Check which files you want to save/not save (Movie, Object) · Change the name

and/or location of

· Click settings

your file/s

· Click Compression tab: Settings · Click Object tab: Horizontal & Vertical Controls, Animate View Frames, Auto-play Views, Scaleable, Mouse Scale Factor · Click Playback tab: User frame Size, Default Pan, Default Tilt, Default Zoom, Default View State,

and Mouse Down

Flattening, Preload,

View State · Click File tab:

Copyright · Click OK

Rotate: (\*\*)

Sort: A

ABC

CBA

#### **Output Files**

Save Set

Movie... Macintosh H...n:testobj.mov

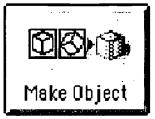
Object... Macintosh H...on:testobj.obj

Settings...

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Object Maker Settings	
Compression   Object   Playback   File	_
Compression	
Settings Cinepak High (75)	
-	į
Cancel OK	)

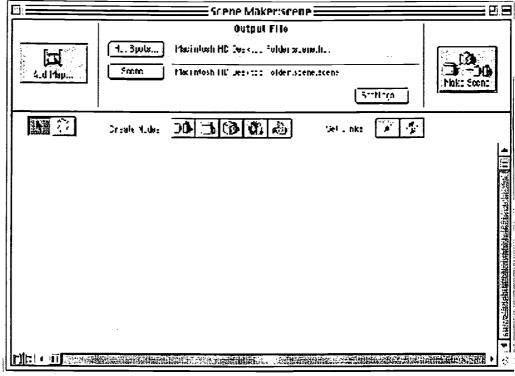
· Click Make Object



## scene Haker

- · Open software
- · Select New from the File menu, then select Scene Maker
- · Type a name for your Scene Maker document
- · Select Save
- · Scene Maker window appears

- · Click Add Map (optional)
- · Select a map file for your scene
- · Click to change the name and/or location of your file/s (Hot Spots, Scene)
- · Scene Components: Panorama Stitcher; Panorama Maker; Object Maker; URL; Blob
- · Click and drag to the Scene Maker window all Panoramas and Objects





#### Culput File

Hot Spots... | Macintosh HD:Desktop Folder:scene.hot

Scene... | Macintosh HD:Desktop Folder:scene.scene

Create Nodes:



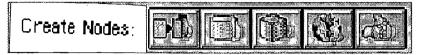




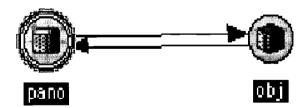




- · For URL and Blobs, Click the appropriate icon
- · Move the cursor to the Scene window and click
- · An icon representing the URL of Blob appears
- · The node's name, Untitled, appears just below it
- · Click the Set Dual Links button or One-way Links button
- · The Dual Link icon allows you to go back and forth between Panoramas and Objects
- · You cannot create a Dual Link to an URL or a Blob
- · After selecting the Link, place pointer over a node and drag the pointer to another node
- · Click the Arrow icon to select a node
- · (The Hand icon allows you to move the map)



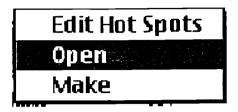


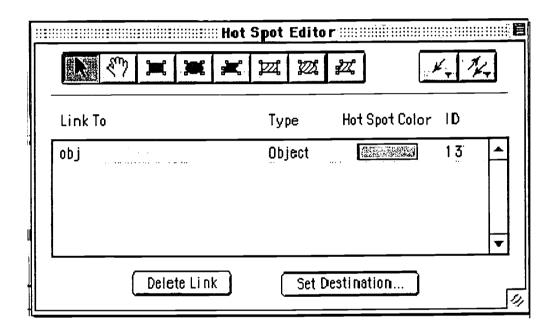


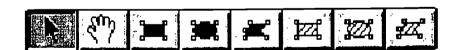


- · Place the pointer over the linked panorama node, then press and hold
- · A pop-up menu appears
- · (Edit Hot Spot -Opens the Hot Spot Editor window)
- · (Open Opens the panorama or object)
- · (Make Processes the node)
- · Choose Edit Hot Spot
- · The Hot Spot Editor window appears

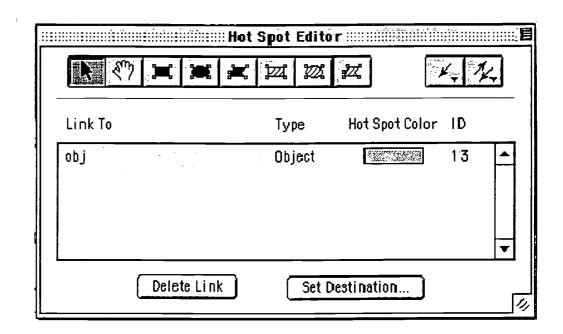
· Define the hot spot by selecting one of the geometric shapes in the Hot Spot Editor window · Click and drag the pointer over the area that you want to define as a hot spot

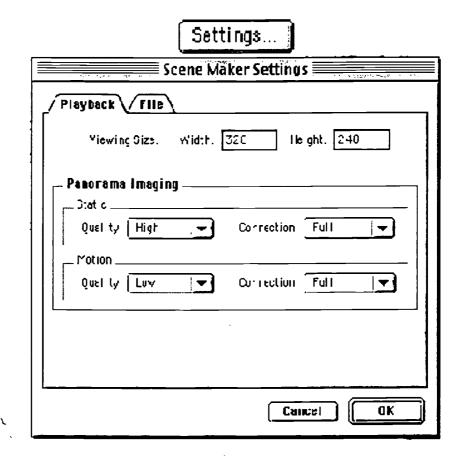






- · Click the Set Destination in the Hot Spot Editor window which will display an image of the destination mode
- · Select the view that fits well with the view from which the viewer will be linked
- · Chose Set Destination
- · Close the Set Destination window
- · Click Save
- · Repeat as necessary
- · Click Settings: Playback; File





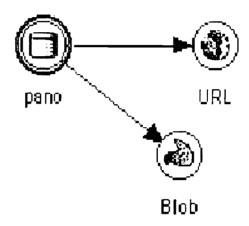


- · Click the Blob or
- **URL** button
- · in the Scene

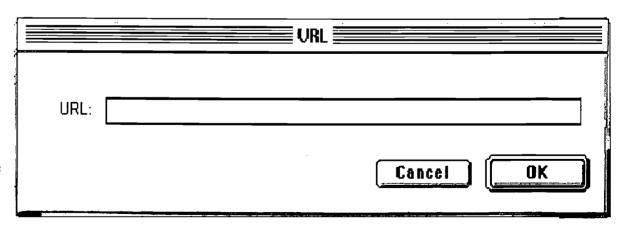
Maker window

- · Create a one-way link from a panorama or object
- Place the pointer over the node and select Edit Hot Spots
- · Follow the steps described earlier
- · Click and hold down on the URL icon
- · Select Open

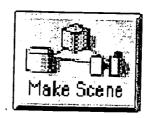




- · Type the complete URL in the window that appears
- · Click OK
- · Blobs are used with a programming tool or scripting language to define what action is taken when the user clicks the Blob link



- · Click the Make Scene button in the Scene Maker window
- · When finished, a playback window opens
- · Check links and make adjustment as needed



#### Click to open author's original document.

## **Creating Virtual Tours**

#### With

## **QuickTime Virtual Reality**

#### LIST OF RESOURCES

- QuickTime VR Authoring Studio
  - o Apple Computer, Inc
- The QuickTime VR Book
  - o Susan A. Kitchens
  - o Peachpit Press
  - o ISBN: 0-201-69684-3
- www.kaidan.com
- www.vrtoolbox.com
- www.apple.com
- www.smgVR.com
  - o mapsaVR
  - o soundsaVR
- www.adessosoft.com

**NECC 2000** 

## Atlanta, Georgia



## Developing multimedia tools to support functional and community training

Dr. Cheryl Wissick, University of SC, Columbia, SC
Dr. John Langone, University of Georgia, Athens, GA
Charles de Krafft, Richland District Two, E.L. Wright 8th Grade Algebra Teacher
Windy Schweder, Doctora
Poster Session: June 26, 2000

- I. Why Multimedia?
- II. Examples of Multimedia
  - Web-based
  - PowerPoint
  - HyperStudio
- III. How to create Multimedia
- IV. Works in Progress

#### Web References:

World Wide Web Toolboxes

http://www.ed.sc.edu/caw/toolbox.html

Buying Lunch at the Cafeteria

http://www.ed.sc.edu/caw/cafe/cafeteria\_photo/cafel.htm

Grocery Shopping Links

http://www.ed.sc.edu/caw/toolboxshop.html

#### References:

Alcantara, P. R. (1994). Effects of videotape instructional package on purchasing skills of children with autism. <u>Exceptional Children</u>, 61, 40-55.

Cuvo, J., & Klatt, K. (1992). Effects of community-based, videotape, and flashcard instruction of community referenced sight words on students with mental retardation. <u>Journal of Applied Behavior Analysis</u>, 25, 499-512. Haring, T. G., Breen, C. G., Weiner, J., Kennedy, C. H., & Bednersh, F. (1995). Using videotape modeling to facilitate generalized purchasing skills. Journal of Behavioral Education, 5, 29-53.

Haring, T. G., Kennedy, C. H., Adams, M. J., & Pitts-Conway, V. (1987). Teaching generalization of purchasing skills across community settings to autistic youth using videotape modeling. <u>Journal of Applied</u> Behavior Analysis, 20, 89-96.

Langone, J., Shade, J., Clees, T., and Day, T. (In press). Effects of multimedia instruction on teaching



functional discrimination skills to students with moderate/severe intellectual disabilities. <u>International Journal of</u> Disability, Development and Education, 46(4).

Roblyer, M. D. & Cass, M. (1999), Still more potential than performance: Virtual reality research in special education. Learning and Leading with Technology, 26(8), 50-53.

Wissick, C.A., Lloyd, J.W., & Kinzie, M.B. (1992). The effects of community training using a videodisc-based simulation. Journal of Special Education Technology, 11, 207-22.

Wissick, C.A., Gardner, J. E., & Langone, J. (1999). Video-based simulations: Considerations for teaching students with developmental disabilities. <u>Career Development for Exceptional Individuals</u>, 22, 233-249.

#### For more information contact:

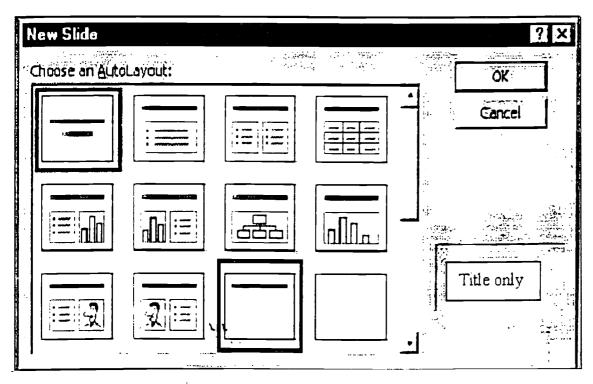
Dr. Cheryl Wissick cwissick@sc.edu

## "How-To" Page Creating Concept Slides with PowerPoint

#### Creating slides with one photo per page:

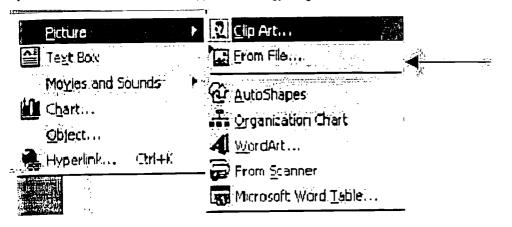
Introducing concepts with one slide and one word, Teaching students with examples and not-examples

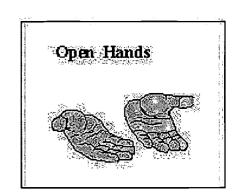
- 1. Start PowerPoint and choose Blank Presentation.
- 2. Insert new slide
- 3. Choose "title only" Autolayout



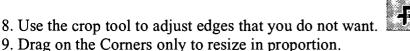
4. Insert - Picture - From File (EX: open clipart used instead of photo to save space)







- 5. Review pictures until you locate one you want, click on Insert
- 6. Wait until the photo appears
- 7. Adjust photo to the center side of page.

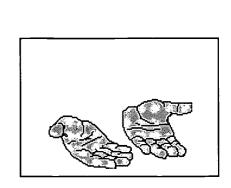


- 10. Label with the concept. (example: FULL)
- 11. Repeat the steps to include all photos and all concepts.
- 12. Remember to Save your Show.

#### **Directions for creating PowerPoint Concepts Slides:**

Tutoring or evaluation activity - two photos per slide.

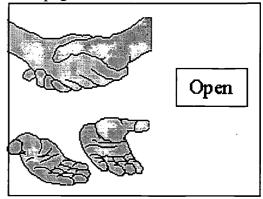
- 1. Insert new slide
- 2. Choose "title only" autolayout
- 3. Insert Picture From File (example: tray empty)
- 4. Review pictures until you locate one you want, click on Insert
- 5. Wait until the photo appears
- 6. Adjust photo to the left/right side or top/bottom of page.
- 7. Use the crop tool to adjust edges that you do not want.
- 8. Drag on the Corners only to resize in proportion so that it only take half the page.
- 9. Insert Picture From Slide
- 10. Choose photo that is opposite in concept but same location (example: tray full is the opposite of tray empty)
- 11. Wait until the photo appears
- 12. Adjust photo to the right side of page.





- , Quick Starts: Web Toolboxes to Support Technology Integration
- 13. Use the crop tool to adjust edges that you do not want.
- 14. Drag on the Corners only to resize in proportion so that it only take half the page.
- 15. Label with one concept. (example: FULL)
- 16. Repeat the steps to create the same slide but label with the opposite concept. (example, next time label it empty)
- 17. Save the presentation.

For this activity, students will work with the teacher or peer tutor to point to the correct photo for the concept listed.



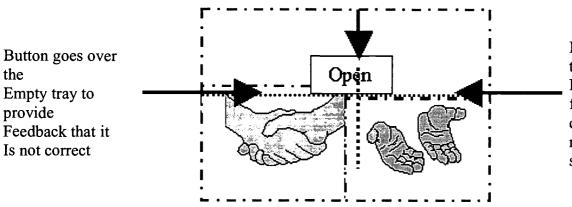
#### Directions for creating PowerPoint Concepts Slides -Creating feedback buttons

Activity with buttons and feedback- two photos per slide.

- 1. Use the presentation you created with two photos per slide. Save as a different name.
- 2. Go to the first page with two photos.
- 3. Create a blank button to cover the part of the page that you do not want to have the students click to go on.
  - a. From the draw menu select autoshapes action buttons.
  - b. Choose the button with no design.
  - c. Drag the button to cover the part of the page you want.
  - d. The button will be in a color but we will change that.
  - e. For the Hyperlink choose NONE.
  - f. When finished click DONE.
  - g. Now doubleclick on the button for the color and lines.
  - h. Choose No fill for color and No Lines for lines
  - 4. Now create a button for the correct answer.
  - a. From the draw menu select autoshapes action buttons.
  - b. Choose the button with no design.
  - c. Drag the button to cover the part of the page you want.
  - d. The button will be in a color but we will change that.
  - e. For the Hyperlink choose Hyperlink to: Next Slide
  - f. Click the button in front of Play Sound, then choose the sound to play.
  - g. When finished click DONE.
  - h. Now doubleclick on the button for the color and lines.
  - i. Choose No fill for color and No Lines for lines
- 5. Create as many buttons as needed to cover the whole page. You may choose to provide feedback when the student does not get the correct answer.

Button goes over the top part of the page, to create a blank button so that students cannot accidentally move to the next page.





Button goes over the Full tray to provide feedback that it is correct and to move to the next slide.

Wissick, Langone, de Krafft, & Schweder, June 2000



#### U.S. Department of Education

Office of Educational Research and Improvement (OERI)

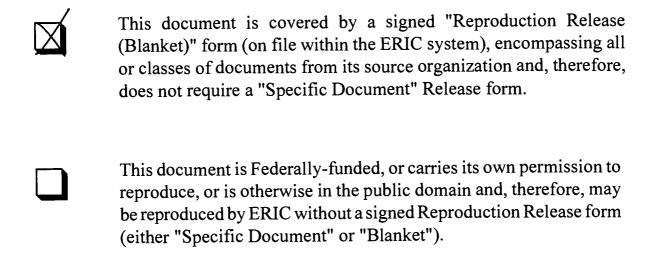
National Library of Education (NLE)

Educational Resources Information Center (ERIC)



## **NOTICE**

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